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A

TREATISE

ON

CARRIAGES.

COMPREHENDING

COACHES, CHARIOTS, PHAETONS,
CURRICLES, WHISKEYS, &c.

TOGETHER WITH THEIR PROPER

HARNESS.

IN WHICH

THE FAIR PRICES OF EVERY ARTICLE

ARE ACCURATELY STATED.

BY WILLIAM FELTON, COACH-MAKER,
No. 36, LEATHER-LANE, HOLBORN.

Vol. I.

LONDON:

PRINTED FOR AND SOLD BY THE AUTHOR; BY J. DEBRETT, PICCADILLY; R. FADLDER, BOND-STREET; J. EGERTON, WHITEHALL; J. WHITE, FLEET-STREET; W. RICHARDSON, CORNHILL; AND A. JAMESON, LONG-ACRE.

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1859, Mar. 25.
Gift of
Henry G. Denny, Esq
of Boston.

ADVERTISEMENT.

THE Nature of the Subject here treated of, does not require any great share of literary abilities, otherwise the Author is not vain enough to have attempted it: his education and profession effectually debar him from any pretension in that way; and he therefore hopes, that any deficiences or mistakes in point of Style will be overlooked, and that he has expressed himself so as to be understood, which is all he aims at.

As the Author understood that a number of the Coach-makers, on hearing of his intended Publication, had declared their disapprobation of it in very pointed terms, and as he pretends not

not to any ability in his Profession superior to that of other Tradesmen, he was willing to submit his various Statements to their consideration, and with that view wrote a Letter to twelve of those whom he considered as the principal in the Trade, from whom, however, he did not receive any Answer, but which, it is hoped, will sufficiently justify the Author with the Public from having the least intention to injure the fair *Trader.*

COPY OF THE LETTER

ABOVE REFERRED TO.

Sir,

I take the liberty of acquainting you, that I have completed for the Press (which soon will be published) a Treatise on Carriages and Harness: But conceiving that this may be considered as an attempt to injure the Trade, I can assure you I have no such

such intention; and, to satisfy you that I have not, I am ready to submit the different Prices I mean to publish, to the consideration of any candid and respectable person whom the Trade may choose to nominate; and if I shall be satisfied that these Prices are not fair both to the Trade and the Employer, I am willing they should be corrected.

I have sent this notice to twelve, whom I consider as the principal of the Profession---and, if they choose to appoint any one to meet me on the business, I have no doubt that every thing will be adjusted to the general satisfaction.

I am, Sir, &c.

(Signed) WILLIAM FELTON.

INTRODUCTORY OBSERVATIONS.

THE Art of COACH-MAKING has been in a gradual state of improvement for half a century past, and has now attained to a very high degree of perfection, with respect both to the beauty, strength and elegance of the machine: the consequence has been, an increasing demand for that comfortable conveyance, which, besides its common utility, has now, in the higher circles of life, become a distinguishing mark of the taste and rank of the proprietor.

The superior excellence of English workmanship in the construction of carriages, has not only been the occasion of a very great increase in their number among the inhabitants of this country, but the export-

ation of them to foreign nations, in time of peace, is become a considerable and profitable branch of British commerce.

Though the coach-builder and harness-maker are professions of a very different nature, yet more than a third part of the present master coach-builders are in fact only harness-makers, whose judgment in the construction of a carriage can go little further than might that of a shoe-maker; yet these professors, aided and supported by many of the coach-makers, have always opposed, and still continue to oppose, every other tradesman concerned in the manufacture of the principal materials of which a carriage is composed, and in particular wheel-wrights, smiths, painters, carvers, joiners, &c. whose judgment must far exceed that of harness-makers, and many of them, from habitual practice, acquire a knowledge little inferior to the professed builder himself.

Thus

Thus united, they strenuously oppose every new adventurer in the trade; though ever so well qualified, if not bred a harness or coach-maker, and connected with them in this association. They (the associators) have been pleased to dignify themselves with the title of *Brights*, and to bestow upon their rivals the opprobrious epithet of *Blacks*.

This conduct has an evident tendency to a monopoly, and of consequence is a discouragement to the ingenious and enterprizing tradesman, whose talents might otherwise bring him forward to eminence in the profession.

The coach-maker, as it is generally understood, is no doubt the principal in this business: but there are very few professions wherein a greater number of artisans are necessarily employed; such as those already mentioned, as well as several others. From the capacity of each of these to execute their work in a neat

and substantial manner, the credit of the coach-maker principally arises: and though ready enough to assume the merit of the work, yet they are not so forward to give proper encouragement to those who execute it; on the contrary, they are always for reducing the prices of their labour so much, that the poor tradesman has scarcely the bare means of subsistence left him.

So mercenary are many of them, that they will neither bestow their money nor their time in projecting any thing new, but satisfy themselves with working after a copy. Few of them, indeed, have abilities sufficient to produce any thing original, yet have procured patents for pretended improvements, which are in fact of little public utility, and owe their origin to the ingenuity of others, but the merit of which they are ready enough to assume to themselves.

The

The principal improvements that have been made in carriages for these last twenty years, are originally the invention of Mr. JOHN HATCHET of Long-Acre, whose taste in building has greatly contributed to the increase of their numbers, and enhancement of their value. To him every coach-maker is highly indebted, as at present they seldom build without copying his designs: he therefore stands justly distinguished, and is an instance, that the public are ever ready to reward superior merit. Others there are, of very slender abilities, who have acquired no small share of public favour, which can only be attributed to their being recommended to a certain Great Personage, and not to any distinguished merit of their own.

The proficient coach-maker ought to be fully acquainted with the theory of all the different branches appertaining to coach-building, as well as a complete judge of the

the workmanship, and of the sufficiency of the different materials. Strong, sound and well-seasoned wood is indispensable. He must be careful also that his iron-work be well fitted, and that all the other materials be good of their kind; without such knowledge, he will prove but a superficial tradesman.

The Gentleman whose situation in the world enables him to keep a carriage, has hitherto been unavoidably deprived of the means of acquiring such a knowledge of the manner of building and repairing carriages, as would enable him to judge when any attempt is made to impose upon him, either in the original price charged for a new carriage, such as his fancy and inclination may lead him to make choice of, or in the necessary expence that may be requisite to repair the damages a carriage may have sustained by time or accident. It is therefore intended, in this Treatise, to exhibit

to

to public view, such a distinct account, not only of the original price of the carriage, and the repairs that may be necessary, but also of the separate prices of the different component parts thereof, as will enable the proprietor effectually to guard against imposition.

This Treatise will be of equal advantage to the Gentleman who builds a carriage, as the House-builder's Price-book has, by experience, proved to be to him who builds a house; and as there are many more Gentlemen who amuse themselves in getting carriages built than in building houses, the utility of this Treatise will be more general.

Carriages frequently get out of repair, from the ignorance or inattention of the coachman, whose peculiar province it is to watch over the least injury the carriage may sustain, and, by an immediate application of the proper remedy, to prevent the extraordinary expence that must ensue, by suffering

suffering the injury to remain for any considerable space of time unrepaired.

Gentlemen are frequently imposed upon by the misrepresentations of their coachmen, who too commonly attribute the consequence of their own neglect to the insufficiency of the carriage, by which they not only bring the tradesman into disrepute, but deprive him of the future commands of his employer.

A practice has been introduced, and for a long time continued, that the gentlemen of the whip receive douceurs from the tradesmen employed in building or repairing of carriages, no doubt with the original intention of encouraging the coachman to endeavour, by his interest with his master, to continue his custom with him rather than employ another. It is very likely, the zeal and activity of the coachman will, in a great degree, be proportionate to the encouragement given him: very extravagant

expectations

expectations are sometimes formed by many; which, if not complied with, is sure to draw the resentment of the disappointed coachman upon the tradesman; and if complied with, he has no other method of reimbursing himself for this very unfair transaction, than by charging an exorbitant price for his workmanship; so that ultimately his employer suffers a manifest injury.

It is also an important part of the coachman's duty, to be cautious of preserving the strength and beauty of the carriage under his care. That his master may be enabled to judge whether or not he executes this part of his duty in a proper manner, particular DIRECTIONS will be given in this Treatise, how the preservatives for the different parts of the carriage are to be applied, so as effectually to prevent damage by the ignorance, or imposition by the artifice, of the coachman; and that, without a

Gentleman descending, in the least degree, to any thing unbecoming his exalted situation in life.

In these DIRECTIONS will be given particular and useful receipts, with proper explanations, for the preservation, and even restoration, of painting, when sullied in its lustre; and of the proper method of cleaning the plating without injury, and preserving the elasticity, beauty and strength of the leathers and harness.

This Treatise can by no means injure the fair and honest trader, but will rather be of advantage to him, in so far as he may charge such prices as are fair and reasonable, without the risk of suspicion; and his employer will always have it in his power to have recourse to a regular standard of prices, both for building and repairing. It will, however, prove an effectual check upon the fraudulent and designing: and from that quarter the Author will,

will, no doubt, be loaded with calumny; but he is prepared to meet it, and to refute every attack made upon the propriety and fairness of the different charges that are stated in this Treatise, either in building or repairing. The length or shortness of the period of credit being a material consideration with the tradesman in his charge, will be adverted to.

A tradesman in straitened circumstances, may sometimes, for prompt payment, be induced to work upon very low terms, and even, upon urgent occasions, be tempted to perform work at a losing price: Others, whose circumstances enable them to give long credit, have charged very extravagant prices upon that account. A comparison, therefore, of the different prices charged by two tradesmen, under the circumstances just mentioned, might mislead a superficial observer; but a proper attention to the charges stated in this

Treatise, under the circumstances just alluded to, will enable the proprietor to form a proper judgment upon the whole.

It is not uncommon to charge different prices for articles of the same kind, by the same tradesman, to his different employers, taking advantage of the uninformed. This palpable imposition may be now detected, by having recourse to the regulated prices stated in this Treatise.

Gentlemen are frequently led into useless expence, in repairing their carriages, especially where a general and thorough repair is requisite. Upon examination, it will sometimes be found, that the expence of the repairs is so exorbitant, that the price paid for them, and what might be obtained for the old carriage, would be fully sufficient to purchase a new one, double the value of the repaired one to the proprietor. This observation will not be favourably received by the unfair tradesman,

man, as a considerably higher profit arises to him from repairing than from building a carriage.

If the coachman be honest, attentive to his master's interest, and a tolerable judge of his business, he will discover when *any* repair is necessary, and, in some measure, to what extent that repair ought to be carried; but, if swayed by sinister motives, and the tradesman should happen to be of the same complexion, a wide field opens for collusion between the two, and the proprietor is sure of being egregiously imposed upon; especially, as coach-makers bills are generally given in technical terms, not understood by their employers. However, the Glossary annexed to this Treatise will give a full explanation of them, and enable the proprietor to detect any fraud attempted to be put upon him by this collusion.

If a Gentleman wishes to contract with the builder, for a carriage suitable to his own taste, in elegance, beauty and convenience, he will, by this Treatise, have it in his power to ascertain the price he should allow, without the least risk of being imposed upon.

It frequently happens, that Gentlemen, when they get a new carriage built for them, are disappointed in both the appearance and conveniences of it. This arises from the orders not being given in terms sufficiently explicit; an inconvenience that will be effectually removed by an attentive observation of the Plates given in this Treatise; and the tradesman can have no excuse for not executing his orders agreeable to the directions of his employer.

Another unpleasant circumstance arising from Gentlemen not being previously able to stipulate for a certain price is, that when the bill is presented, though the prices should

should be fairly charged, yet they are apt to conceive themselves imposed upon, as the amount may exceed what they expected. This frequently occasions litigations at law; and those who may pay their bills without resorting to this disagreeable method, yet retain, though perhaps erroneously, an opinion that the prices are exorbitant: the consequence is, the tradesman suffers in his reputation, and perhaps loses his customer.

Many Gentlemen there are, who, however well they may have been served by their coach-maker, suffer themselves to be trepanned by an advertisement, or some other incitement, to employ tradesmen with whom they are unacquainted, and when, upon trial, they think themselves imposed upon, the affair is frequently referred to another coach-maker, who may find it his interest to condemn what he himself practises,

tises, in order to ingratiate himself with the Gentleman, and secure his future custom.

Some Gentlemen go about, to find who will work cheapest for them, holding out as an inducement the promise of their future employment; and, when they have got their business done at an under rate, desert the tradesman, and attempt to take the same advantage of the next they meet. This artifice, when detected, naturally stimulates the tradesman to make reprisal upon the first stranger who employs him, by charging an extravagant price upon his first job, upon the supposition that he will never be employed on a second.

There is little doubt but exceptions will be taken to the prices and regulations here laid down, by some tradesmen who may refuse to abide by them, as it may check their progress to rapid fortunes; but Gentlemen will be relieved from this difficulty, as there are many respectable tradesmen

men who will be very happy to be employed upon the terms proposed, which are such as will enable them to pay a liberal price to every artificer concerned in the business, and to live respectably themselves; it must necessarily be presumed, that the Author is well warranted in his calculations, as it involves his own interest, as well as that of others of the same profession.

It may happen, that designing tradesmen, when they find they can so easily be detected in any overcharge they make, in order to elude detection, may give other names than those commonly used in the Trade (and of which an explanation is given in the Glossary annexed), to some of the articles charged in their bill; in such cases, Gentlemen may have recourse to any tradesman in whom they can confide, or to the Author of this Treatise.

TREATISE ON CARRIAGES.

ON BUILDING.

THAT Carriages should always be built adapted to the places for which they are destined, is a rule invariably necessary to be attended to, for town, country, or continent; not, however, to such extremity as to prevent their use in either situation, but to accommodate them as nearly as possible to each, as a much greater stress is laid upon the carriage in drawing over stones and channels, than on a smooth road. This makes it absolutely necessary to build stronger for the town, than if intended for the country only, owing to the general goodness of our roads: it is also necessary to build stronger for the continent than even for the town, as the badness of their roads obliges them to use six horses to what on a well made road two would draw with equal facility.

The construction of every carriage should be as light as the nature of the place it is destined for, and its necessary work will possibly admit; it is folly in the extreme to add a constant oppression, by additional weight to the horses, as the pleasure of conveyance arises from expedition and ease, which cannot be effected in a cumbersome heavy carriage, besides the unpleasant sensation of toiling the cattle unnecessarily.

A false opinion pervades the mind of many people, which is, to have the carriage built strong, regarding its durability in preference to the preservation of their horses. Superior strength is effected only by addition in weight of materials; and many builders, regardless of any thing but their own credit, are ever imposing heavy durable work, by which they establish themselves as sound, good workmen.

The principal merit is in building as light as will sufficiently secure from danger; and what a light carriage may lose by wearing a shorter time than a heavy one, is more than compensated by the preservation of the cattle. It is also reasonable to suppose, that the heavier the carriage is, the greater the wear will be on the wheels, and a consequent loss ensue.

Many attempts have been made to give ease to the horses in the draught of carriages, by new-invented

vented axletrees and boxes; but, however sanguine the inventors may have been, nothing has yet been produced equal to a light carriage and fleet horses; though it cannot be denied that some of these inventions have particular advantages, which will be explained in their proper places.

Although, in the Glossary, the technical terms that are made use of by the coach-maker are explained, yet this Treatise will be much assisted by a descriptive representation on Plates—1st, of the naked framings or skeletons; 2dly, of the materials with which they are finished; 3dly, of the articles for convenience occasionally used; and 4thly, of the carriage in the finished state.

As it would be too prolix to represent as many carriages as are finished in different ways, it will be sufficiently explained by describing one of each sort, as the present mode of carriages are built—representing, first, the timbers or skeleton thereof for information concerning the different parts, regulated to a half-inch scale, reckoning half an inch to the foot.

One circumstance, unless particularly noticed, will tend much to perplex in reading this Treatise, viz. the meaning and application of the word Carriage. In the usual meaning of the word among coach-makers, it is the lower system, on which the body containing the passengers is fixed

or

or suspended, and to which the wheels are placed: though, speaking generally of coaches, chariots, phaetons, &c. when completed, they are properly called carriages of such descriptions; but as this Treatise will be divided in chapters and sections, the distinction will be readily understood, particularly as they are separately treated of, beginning first with the bodies, in which the passengers sit, and next with the carriage, or under system, on which the body is placed.

CHAP. I.

ON BODIES.

There are few mechanical structures executed with a greater nicety than this, it being the receptacle of passengers. The principal attention of the proprietor is fixed on the proper finishing of this part, so as best to answer the purposes of convenience or shew. The form of structure depends much on fashion; but the size is proportioned to the intention of its use, and regulated by

by the width of the seat and the height of the roof; and the finishing executed agreeably to the conditions of contract. Its timbers for the framing should be of a particular dry ash, executed with great exactness through the whole; the pannels are of a soft streight-grain mahogany, smoothed to a fine surface, and fitted or fixed in prepared grooves, or bradded on the surfaces of the framing; the insides are well secured by glueing, blockings and canvas, to the pannels; the roof and lining, or inner parts, are made of deal boardings.

As no parts of the framing of the body, if well executed, are likely to fail by use, a reparation in consequence of bruises and other accidents, is all that is to be expected. The pannels generally suffer most injury, either from excessive heat, or bad quality of timber; and great attention is required in selecting good boards for this article, which, if not extraordinary dry, are sure to fail, by drawing from the grooves, bulging, or cracking, if confined; but though the timbers are good, if the carriage is exposed to any excess of hot weather, it is a great chance but they will fly; but no discredit ought to attach to the builder from that circumstance.

The first summer a carriage is used will prove the sufficiency of the pannels. So soon as they begin

begin to start from the grooves, as they mostly will in some degree, the builder should examine and relieve them, where confined, to prevent cracking. A little drawing from the grooves is to be expected, and is of no material consequence; but if they crack, it will always be a disagreeable object to the eye.

As sufficient room in the carriage makes the seats comfortable, it should be the first object; and the width of the body ought to be in proportion to the number it is meant to contain. Open bodies have this advantage, that three can sit with tolerable ease on the same length of seat as would only accommodate two in a confined one. A full-sized seat for a close body to contain three, is from four feet to one or two inches more; that of an open body, from three feet four, to three feet five or six inches. This size is sufficient for two in the close, and from two feet seven inches, to two feet eight or ten inches, in the open bodies. The width across the seats is never regular, as the shape of the body proportions it; but as the usual size of both close and open, is from fourteen to eighteen inches, the height of the seat from the bottom is in general fourteen inches; and from the seat upwards to the roof, from three feet six inches, to three feet nine inches; the cushions not included.

For

For the advantage of height, it frequently becomes convenient to make the seat moveable. This is only necessary to give freedom to extraordinary head-dresses. Few people rise above three feet from the seat; so that allowing two inches for the cushions, there is left in the clear, without the head-dress, from four to seven inches. As the intention of its use should regulate the size of the body, so should the size of the body the strength and weight of the carriage; and it is for want of attention to this particular, that the absurdity of a heavy carriage to a small body, and a light carriage to a large one, may be frequently observed: the consequence, besides the appearance, is, that the heavy body sooner injures the light carriage, while on the other hand the heavy carriage is an unnecessary incumbrance. In this the builder's judgment must regulate him, agreeable to the size of the body, which should only be contracted end-ways, by which the side view, so essential to the beauty of the carriage, is preserved.

SECT. I.

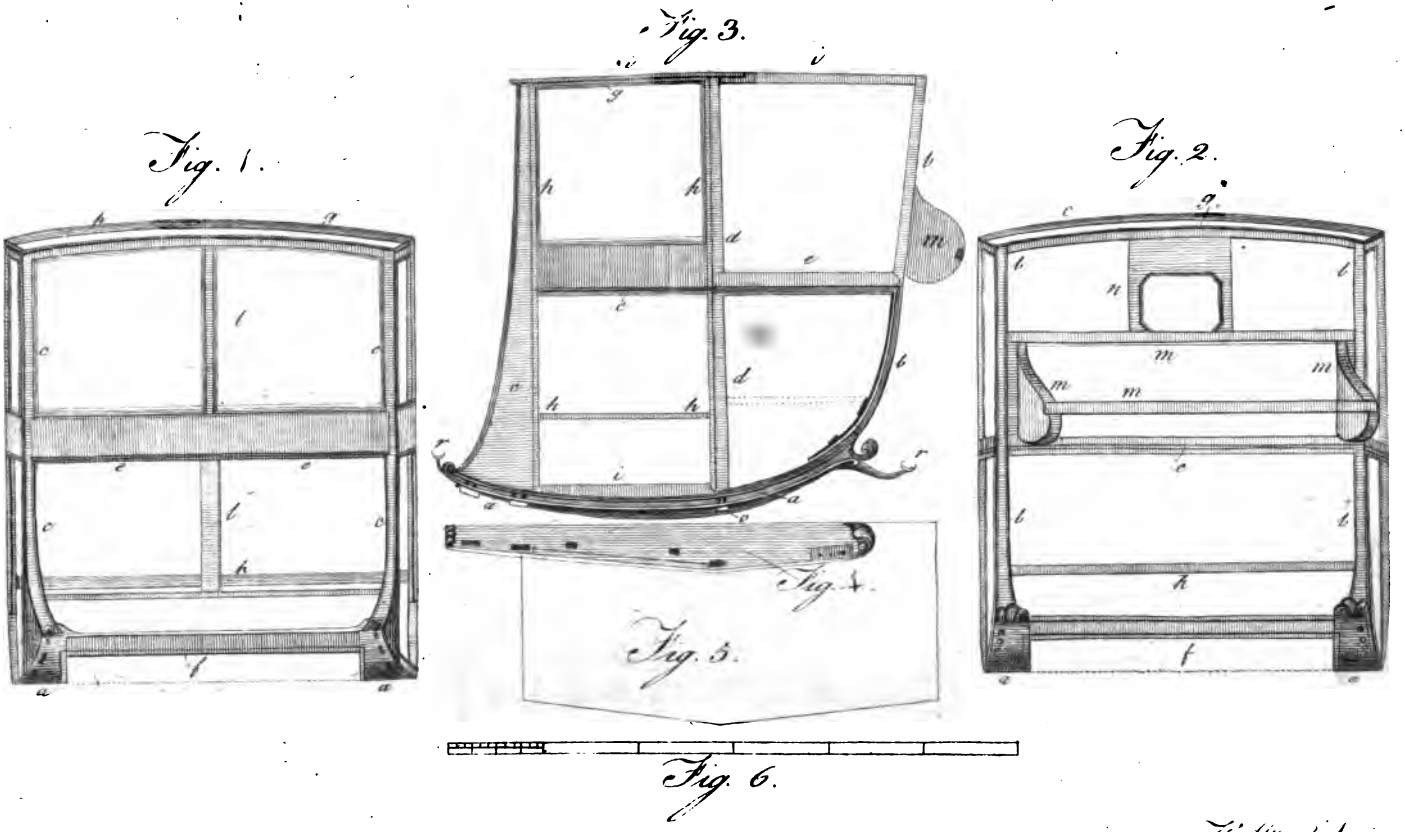
A CHARIOT OR POST-CHAISE BODY.

These bodies differ not in the least from each other. The occasion for their use only alters their name: by the addition of a coach-box to the *carriage* part, they are called Chariots; the post-chaise being intended for road-work, and the chariot for town use. If intended for post-work only, the materials are somewhat lighter than those of a town carriage; but, when alternately used, sufficiency must be observed. The width of the seat, as before observed, regulates the size or strength of the body. The framings are not required so strong for one or two, as for three persons. If generally used for three, the length of the seat should be from four feet to four feet one or two inches; but if only for a third passenger occasionally, three feet eight inches will be sufficient, with a seat to draw out from the centre. The size might be reduced, but the appearance would be hurt by it, as a full body looks best.

In this sort of bodies, a greater width is allowed for the front than for the back of the seat,

to

Plate I.



H. Wilson Sc.

to make it more commodious for the elbows; and the door-lights or windows are frequently contracted on the seat side, that passengers may be more secure from outward observation, and at the same time have a sufficient view from within. The advantage of lightness, also, renders these bodies preferable to any other, as the mode of finishing them depends so much upon fancy.

To many of the readers of this work, it may be unnecessary to give such a description of the method of framing. To others, more curious, and particularly to those of the trade who are not sufficiently informed, it may prove of no small advantage. As the representations on the Plates are drawn to an accurate scale, it would be superfluous to mention any thing further of the sizes. That which has already been given concerning the seats, &c. for the inside, is presumed sufficient for general notice. Every part of the framing is distinguished by name; and the letters against each, will be a reference to the different descriptions afterwards given.

Fig. 1, 2, and 3, are the front, back and side views, shewing the joints, and the method of framing the separate timbers, previous to putting in the pannels or boardings.

Fig. 4, is the top or inside representation of the main timber or bottom side-piece, which

likewise shews the side-cant, also the grooves and mortoises, in which the other timbers are fixed.

Fig. 5, exhibits the angle lines of the body.

Fig. 6, is a half-inch scale of the whole representation.

A, The bottom side, which is the essential or main timber of the whole, as all the rest principally depend on it. It is of a compass make, and forms the bottom line. In it are the standing corners and fore pillars tenoned, and the steps are bolted on the top. The bottom boards are confined hereto by the assistance of a rocker, which is firmly fixed to the inside. It is also rabbetted from the fore to the standing pillar for the bottom of the door to lap in; and grooved from the standing to the corner pillars to receive the pannels. The ends are mostly ornamented with a scroll; but sometimes, according to fashion, are left equal with the joints, shewing no ornament.

B, The corner pillar, is compassed on the lower part, and forms the main line or sweep of the body. It is spliced or tenoned in the bottom side, grooved in the side and back from the bottom joint to the middle rails to receive the pannels, mortoised at the middle and top to receive the middle and quarter-rails, rabbetted between each for the quarter boardings, or reduced, if meant for pannels, to lap thereon.

C, The

C, The fore pillar, is tenoned also in the bottom side with a double tenon. It entirely shapes the front; and sideways it forms a pannel, ten inches at bottom, diminishing upwards. The original surface is sunk, leaving a moulding only at the corner: on this pillar the door hangs, where it is rabbetted to keep out the air. The inside is boxed or grooved in separate partitions, for the glasses, shutters, &c. to slide in; mortoised in the middle and top for the front top and middle rails, and grooved in front for the pannels.

D, The standing or perpendicular pillar, tenoned in the bottom side and top rails, is one of the main pillars of the body for strength. It supports the roof in the middle, is rabbetted on the inside for the shutting side of the door, reduced at the lower part for the side or quarter pannels to lap on, which are fixed by bradding thereto. The support from the middle is prepared the same way as the upper part of the corner pillars; and in this the seat rails are also tenoned.

E, The middle rails, which divide the pannels from the upper quarters, are grooved on the bottom edge to receive the pannels, and rabbetted on the top for the boarding or pannels. They are distinguished by the situation in which they are placed; those on the side, by elbow rails; those in the doors, by middle door rails; and those in the

the front and back, by back and front rails: the elbow rails only are lapt, and that in the standing pillars; the others are all tenoned in the different pillars. Those rails which form the bottom of the light, or windows, have a small fence reserved behind, over which the glasses, &c. are placed when up, and prevents water from passing into the grooves: they are also left broad, and sunk from the original surface, leaving a moulding on the top and bottom of the outer edges, forming a distinct pannel, on which mostly the crests are painted; those are frequently called door styles.

F, The two bottom bars, are the most essential end-framings, and are tenoned in the ends and the bottom sides; the hind one is rabbetted on the top-edge, to receive the pannel, which is secured to it by a batten nailed on the inside; the bottom is grooved, to receive the boardings, which also are nailed to it; it divides the pannel from the bottom, and is moulded on the outside. The fore bar is left level with the bottom surface of the groove in the fore-pillar, that the pannel may be bradded on it; a moulding or batten is put upon the pannel, so as to form or imitate the rest of the framings; the bottom is rabbetted for the boardings, which are also nailed therein.

G, The roof rails, are compassed to the intended shape of the roof, and are denominated as follows;

follows: those on the sides are called top quarter-rails, which are tenoned in the corner and standing pillars, rabbetted also on the bottom edges for the boarding or pannels; the door-case rails are what form the top casing to the door, mortoised on the standing pillars, and its whole substance lapped some length on the quarter-rails, to which they are strongly screwed. The back and front roof rails are properly so called: the back rail is tenoned in the corner pillars, and rabbetted at the bottom edge for the boardings or pannel; the rabbet in the middle is sunk deeper, to receive the board for the octagon or back light, which is made therein. The front roof rail is tenoned in the fore pillars, and is a framing for the light, the middle of which is deeply grooved out from the bottom, which receives the top of the glass frames and shutters when put up; this, with the door case rails, has cornice pieces nailed on, after the leather on the roof is fixed, which conveys the water from the lights or windows.

H, The door pillars, of a separate framing from the body, mortoised at the two ends and middle for the rails; the one side is grooved in separate partitions, for the glasses and shutters to slide in; the other side is rabbetted, to answer the rabbets of the standing pillars, as they shut in each other, and, thus formed, exclude both water and air; the

the face or outsides, from the bottom of the middle rails downwards, are reduced to the thickness of the moulding and pannel, the same as the standing pillars, as upon the door pillars the pannel is fixed, and a brass plate screwed to the side of each with a double rabbet; the one laps on the door pannel, the other on the quarter pannel, and rises a little above their surface; those pillars are hung with three brass or iron hinges on the fore pillars, and have a box lock fixed on the opposite pillar, which bolts in the standing pillar; the insides of the door pillars are rabbetted to receive the boardings, which form a case for the glasses, &c.

I, The door top and bottom rails, are tenoned in the door pillars; the top rail, with the addition of an inside piece, forms a top groove for the glass, &c.; the bottom is framed level with the reduced surface of the door pillar, for the pannel to brad against; it is fitted in the large rabbet of the bottom side; and on the bottom is fixed a single rabbetted plate, which laps upon and preserves the pannels.

K, The fore and back seat rails; the fore seat rail is tenoned in the standing pillars; the back one is lapped, and screwed on the corner pillar, on a level with each other; on these the boards are nailed which form the seat.

L, The

L, The front or middle pillar, lapped and screwed on the middle and top rails, and is grooved the same way as the side of the fore pillars, with partitions for the glasses, &c.

M, The sword case, so called from its length and convenience for carrying swords or sticks, and, on account of the prominence from the back, is sometimes called a boodge; the ends are made of thick boards, shaped as described, and screwed on the sides of the corner pillars: on the upper part is a rail fixed in the back of the corner pillars, for the boarding to nail against; to which also the octagon piece is fixed: a rail or batten crosses the two projections, to strengthen the board on the bend.

N, The back light piece, which is a thick board, out of which the back light is formed in a square, an octagon or oval-shape, which is rabbetted for the glass, and, on the edges, for the boards, screwed in the two uppermost rails.

O, The rockers, which are two strong boards firmly screwed or nailed to the inner part of the bottom side-piece, from which it descends farthest in the middle, and the descent gradually diminishes to both the extremities: on the bottom of those rockers the bottom boards are nailed; their use is to give depth from the seat,

without affecting the external appearance of the body.

P, The compass rails, called hoop-sticks, five or six in number, shaped to the intended form of the roof, and screwed on the top of the side roof rails; on these the roof boards are nailed.

Q, The rest piece for the glasses, on which they fall when let down; they are screwed at the bottom of the grooves, and against which the lining boards are nailed.

R, The body loops, which are of iron-work, fixed on the bottom side-ends with bolts or screws, by which the whole body is supported by the braces.

This is the complete frame work of a chariot or post-chaise body. The following description is of the body complete, with its pannels and boardings; but as the upper parts are variously finished, it will be necessary to make some observations on the difference.

The upper parts, except the roofs, are generally called upper quarters, that is, side and back quarters. The usual mode of finishing these, is by filling the vacancy with deal boardings, firmly battened on the inside, and covering the surface with leather, tightly strained on, and nailed at the inside edges; over which a moulding goes, and is sewed at the outside edges, making a welt, or nailed in a prepared rabbet, and covered also with mouldings.

mouldings. Other quarters have the vacancy, the pillars, and rails, covered with a pannel or mahogany board, finely smoothed on the outside. The leathered surface is the most secure: the pannel surface looks the best; but the brads with which they are confined, and the other nailings of the head-plates, mouldings, &c. occasion them frequently to split.

The sword-case is prepared in the same manner as the quarters, either with a leather or mahogany surface.

As the present is an improved method of putting in the lower side pannels in a rounded form, they are thus represented. It adds considerably to the fullness of the side, and exhibits the painting thereon to much greater advantage: this is done by the door and standing pillars being left full on the outsides, and reduced by rounding them towards the bottom.

The inside work, where the glasses are contained in the front and doors, is only lined or cased with boardings, and nailed in rabbets, on those pillars which form the lights or windows: the other inside work is battening, blocking, and glueing of canvas, along the edges, and across the grain of the pannels, which glueing very much preserves and strengthens them. The blocking is also a material assistance to the strength, which is

done by a half-square cut cross or angle way, cutting it also in short lengths, and glueing the square sides against the pannel and its framing. The battens are long, thin pieces of board, placed across the grain of the wood, bradded, or secured by blocks or canvas, in order to strengthen or support those parts to which they are applied. The inside work, after being thus finished, should be immediately painted all over, except the seats, and in particular the door and front pannels, before the lining boards are fixed in, so as to expose no timber to the air uncovered with paint, as the air materially affects it, particularly the wide boards or pannels, as they swell in wet, and shrink in dry seasons: a proper attention in this particular is indispensably necessary.

SECT. 2.

ON COACH BODIES.

The accommodation in this body makes it more convenient for large families, being for the most part capable of holding six persons occasionally; but as the size of the body affects the weight of the whole machine, the proprietor has only to proportion it to the number he wishes

Plate II

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

wishes it to contain; the difference of this from the chariot is only in the length, by the addition of a seat side; and as every part of the framing bears the same name in both, it is unnecessary to repeat it, but only to observe, that the coach has no fore pillar as the chariot has.

PLATE II.

Fig. 1, 2, and 3, shew the two ends, or front and back, and the side view of a coach or chariot body, with its pannels or boardings in the framing, and the usual method of placing the grain of the wood. The lower pannels are all fixed in grooves; the upper pannels, or boardings, are bradded on the flat surface, or in prepared rabbets: the sword case, being an addition depending on choice only, is omitted in this representation, for the purpose of shewing the different methods of framing.

Fig. 1, is the fore end, shewing the method of pannelling the quarters; and

Fig. 2, the hind parts of the body, shewing the method of boarding the quarters. The one side of the back is left with the vacancy, on purpose to shew the rabbets for the boardings; and the other side represented with the boardings nailed in the rabbets.

Fig.

Fig. 3, is the side view, shewing the upper quarters, the one end boarded, and the other pannelled.

Fig. 4, is the top view of the bottom side-piece, shewing the mortoises for the standing pillars, the rabbet for the door bottom and the end grooves, wherein the corner pillars are spliced.

Fig. 5, is the half angle of the side, shewing one-fourth of the size within the body, divided at half the extent of the door and ends.

A, The two end pannels, which are distinguished as back and fore; the grain of the wood they are composed of, is placed length-ways, and is bent by a process of heating by fire.

B, The quarter pannels, fixed in the grooves of the bottom side corner pillars and elbow rail, and bradded on the standing pillars.

C, The door pannels, fixed in the grooves of the middle door rails or styles, bradded on the door pillars and door bottom; on which also small brass mouldings are lapped, which screw on to the sides and bottom of the door.

D, The upper pannels, bradded on to the upper parts of the corner and standing pillars, and to the elbow and top quarter rails, which are rabbetted down to the substance of the pannel, within about half an inch of the outer edges; the mouldings are afterwards fixed over the joints.

E, The

E, The upper quarters, boarded for the purpose of being covered with leather: the pillars and rails are rabbetted about half an inch on the inside edges, for the deal boards to be nailed in.

F, The bottom, which is of strong deal boardings, nailed across to the rockers, and which are tongued in each other to exclude air.

G, The battens, made of wood, or thin iron plates, which cross the boards, and are nailed also to the two bottom bars.

H, The roof boardings, which are of thin deals, nailed the long way of the body, and across the hoop-sticks, to which they also are nailed, and prepared smooth for the leather.

SECT. 3.

LANDAU OR LANDAULET BODIES.

These kinds of bodies differ nothing in shape from those last mentioned. The landau is the coach, the landaulet the chariot form; so called from the method of opening at the top, which gives the advantage of air and view to the passengers. The top of the whole, from the middle, throws open at pleasure.

These

These bodies not being assisted by the connected strength of the upper framings, it becomes necessary to make the lower parts of stronger materials, and even to be assisted with strong iron-work, which so increases their weight as to make them objectionable; and this, together with their expence, has almost annihilated the use of them.

The upper parts of these bodies lose much of their appearance, in comparison with those of fixed roofs, as they are covered with loose oiled leather that cannot be japanned, and, by being exposed to the weather, contract, and are offensive to the eye, after being a little time in use; and, now that almost every Gentleman is master of the whip, other open carriages are substituted in their place. Many persons, however, are yet partial to those carriages; for the information of whom, therefore, an exact representation of each is here exhibited. The difference, except in the additional strength of timbers, is only from the middle rails upward, to which height the doors only open; but as mistakes might frequently happen by attempting to open the doors with the glass or shutters up, it is usual to add a spring bolt on that side of the door which shuts; so that when either the glass or shutter is up, it cannot possibly be opened.

Plate III.

Fig. 1.

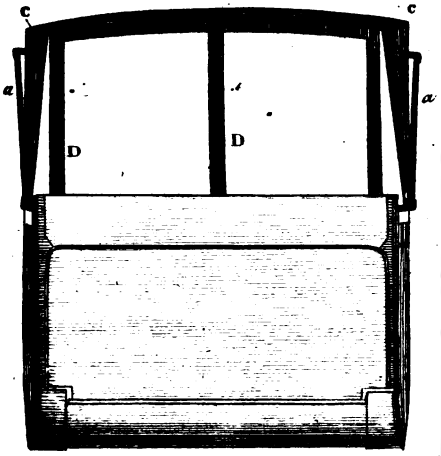


Fig. 3.

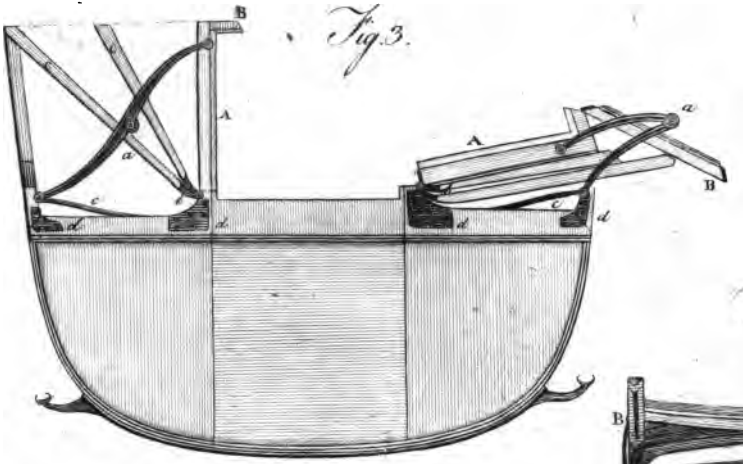


Fig. 2.

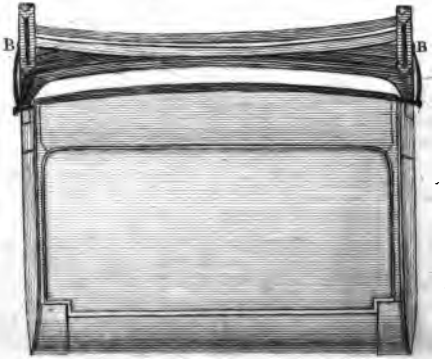


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PLATE III.

LANDAU BODY.

Fig. 1, 2, and 3, The front, side and back views of a landau; the front part shewing the head when fixed, and the back shewing it when down, with the iron-work on, and the usual method of framing these sorts of bodies. The wood work is described on the plates by capitals, the iron-work by small letters.

A, The standing pillar, which above the joint forms the door and standing pillar in one solid piece, and framed in the top rails, to which the fixture for the joint at the top is made fast.

B, The door-case and door-top rails, imitated in one piece: it is strongly framed to the standing pillar, and divided in two places: between them the joints towards the front are secured with a double angle, so that, when shut, they shall not shift from each other.

C, The expanding timbers or hoops, which support the leather, are fixed to the neck-plates, and supported by a strong Manchester tape, called web: the front and back hoop-sticks are formed of the front and back top rails: there are four hoop-sticks to the middle, or over the door-lights, fixed on the top rails, two of which unite at the open-

ing joints on which the fasteners are fixed, to confine the head when up.

D, The front-light pillars, which fall with the rest of the fore-end, jointed as described.

a, The iron-joints, which are mostly plated, fixed on props.

b, The neck-plates, by which the head is fixed up or let down, firmly screwed to the slats, by which the hoops expand.

c, The stay, which strengthens the side of the body against the strain of the joint.

d, The plates fixed across the joints of the elbow rails and pillars, to strengthen them.

LANDAULET OR DEMI-LANDAU BODY.

The difference of this body from that of the landau is very simple: it has no division on the roof, having but one side to act, and opens all from the fore part; whereas the other has two, and opens nearly in the middle of the roof. The usual method of opening these landaulet bodies, is to throw up the roof from the front, and to turn it backwards, throwing the front part forwards; but in this case, the lamps must always be taken off, and laid by.

A

Plate V

Fig. 1.

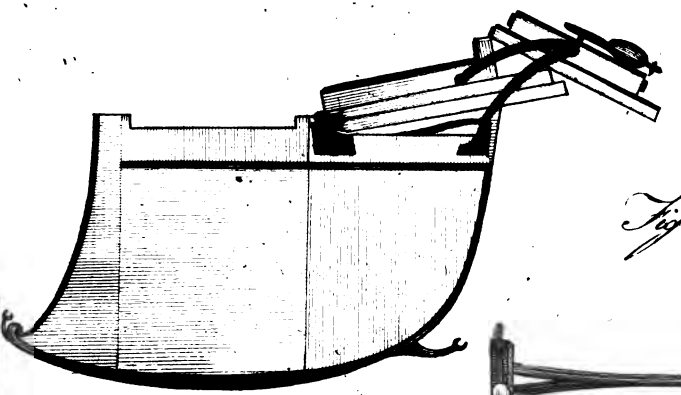


Fig. 2.

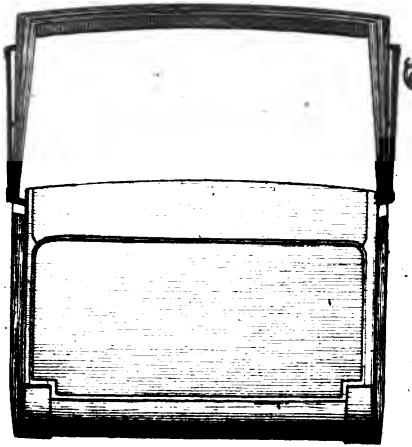


Fig. 3.

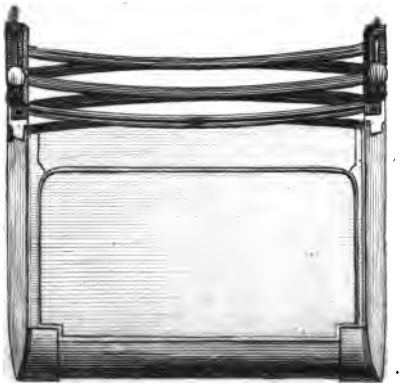
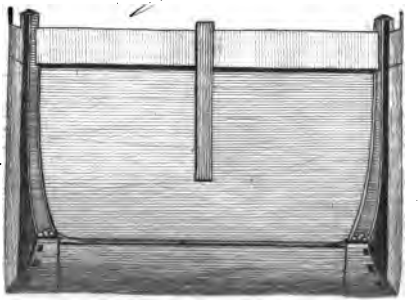


Fig. 4.



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A better method is to fix the joint on the top, instead of the middle of the fore pillar, and to turn it up on the inside of the top case rails, which it turns back upon, and falls with the roof, preserving the lamps undisturbed, as represented in the plate. The description in the former chapter explains what further is necessary to be known in this, which, assisted by the following representation, will prove sufficient information of the demi-landau.

PLATE IV.

Four views of the demi-landau, being an addition of a back, which it represents when up, and which also serves for the landau back, the former plate only shewing the back when down.

Fig. 1, The side view, shewing the method by which the roof is turned back, with the lamps on.

Fig. 2, The back, with fixed top.

Fig. 3, The back, with the top struck down.

Fig. 4, The front when the top is struck back, with the middle pillars or partition-piece turned on the front, which is prevented from touching the pannel by the knuckle of the hinge.

CHAP. II.

PHAETON, CURRICLE, OR CHAISE BODIES.

These bodies have a great variety of forms, and are distinguished by their shape, of which the principal are, the step-piece, the tub-bottom, the chair-back or the half-pannel bodies: and the *carriage*, with which they are respectively connected, is called partly by their names, such as the step-piece phaeton, the tub-bottom chaise, the chair-back curricle, or the half-pannel whiskey carriage, &c.

In these open bodies, no one general rule is observed in building, but mostly formed to the fancy of its occupier. Those intended for one-horse carriages are for the most part light; the length of the seat is generally adapted for two persons only: those for two-horse carriages are generally built of somewhat stronger timbers, and are more roomy.—The method of hanging these bodies depends much on fancy, or a conception of ease; and some bodies are not hung at all, but fixed on the shafts of their carriage, depending entirely for their ease on the springs which are fixed underneath.

Heads

Heads to those open bodies are exceedingly convenient in this changeable climate. Some are permanently fixed, and others are made to take off occasionally: but the addition in their weight, and the expence of the heads, frequently render their use objectionable, particularly to this very light sort of carriages; in phaetons or curricles, however, drawn by two horses, the objection of weight is done away, by the sufficient power of draught.

The great variety of these kinds of bodies would be superfluous to represent here in the skeleton framing. Their different forms are all represented in their finished state in a further part of this work; and as there is a great similarity in the method of framing them, a representation of two in which the greatest difference lies, will be sufficient for the whole—the one, a chair-back body for gig or curricle, which hangs by braces—the other, a simple half-pannel whiskey, which fixes on the shafts. The former is represented with a head, and the latter with wings only: the head is also represented in the two shapes in which they are used, viz. the square, and the round or waggon-top form.

The framing, the pannels, and the inside work, are all prepared and fixed to each other in nearly the same manner as those bodies last described, only less, and differently shaped: the separate

parts

parts of the framing are also called by the same name, agreeable to their situations.

SECT. I.

THE GIG BODY.

This kind of body is principally used on a curricle or handsome chaise carriage. The hind loops are fixed through the middle back of the corner pillars, by which it hangs: the method of hanging at the fore part varies, according to the fancy of the builder, or the situation of the body. The side pannels may entirely fill the space between the two pillars; but, agreeable to the present mode of building, the side is divided at the standing pillar by a door, or an imitation thereof, preserving the same shape; but in either case, whether sham or real door, it projects above the surface of the pannel. The size of the body varies according to the purposes for which it is intended, but in general measure from 2 feet 10 inches to 3 feet 2 inches on the seat.

PLATE V.

Fig. 1, 2, and 3, The front, back and side view of a gig body, in the framing only.

A, The bottom side, in which is framed the pillars and brackets.

B, The corner pillars, left with a swell for strength to support the loop by which the body hangs, tenoned in the top or elbow rails, and bottom side.

C, The fore pillar, tenoned in the bottom side, and lapped in the elbow rails.

D, The standing pillar, tenoned in the bottom side and elbow rails.

E, The elbow rails, mortoised on the corner and standing pillar, and lapped on the fore pillar: on these rails the wings and head are fixed to the side.

F, The back rail, tenoned in the corner pillar, and lapped on the elbow rail, to which it is screwed: on this the pannel brads, and the back of the head is fixed.

G, The front and back seat rails, screwed on the corner pillar, and tenoned in the standing pillar.

H, The bottom bars, tenoned in the bottom side: the pannel brads on the hind one, and the foot-board laps on the fore one, to which it is screwed.

I, The

I, The brackets, tenoned in the ends of the bottom sides: their use is to support the foot-board, in which it is grooved, and screwed from the outside.

K, The foot-board, fixed in the brackets and on the bottom bar.

L, The slats and hoop-sticks, or the timber-work for a square head to support the leather. The side-pieces are called slats, which are separated and fixed by iron-work, hung on a centre pin or bolt to the elbow-rails. The top or roof-pieces are called hoop-sticks, which are lapped, nailed, and securely canvassed to the slats, and which are placed at proper distances from each other, by means of strong Manchester tape, called girt webbing, which is nailed to the back rails and to each hoop-stick. On the outsides of the front and third slat, the fixtures or props for the joints are screwed, by which the head is set.

M, The round or waggon-shaped head, the hoop-sticks and slats of which are more curved, and are lapped in each other, screwed, and canvassed firmly together: their use and manner of operation is exactly the same as the square heads, of which this, at present, takes the precedence in fashion.

N, The sword-case, made the same as the one described in Plate 1.

SECT.

Plate V.

Fig. 1.

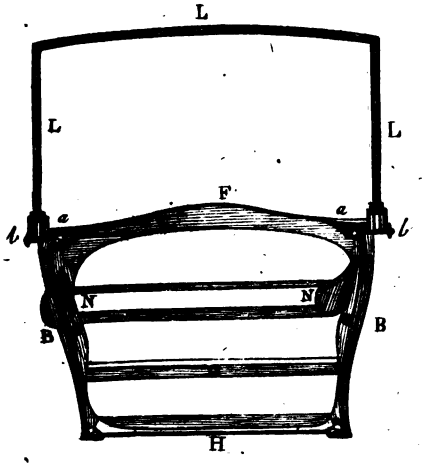

Fig. 2.

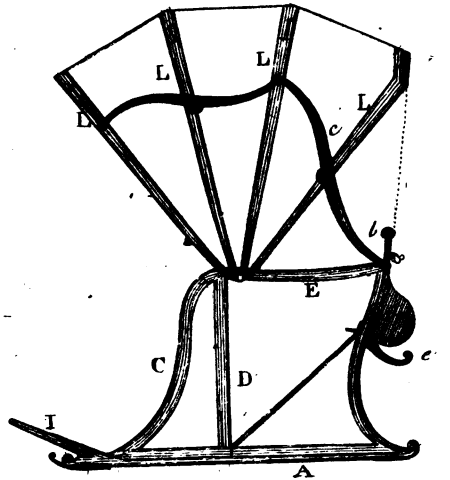

Fig. 3.

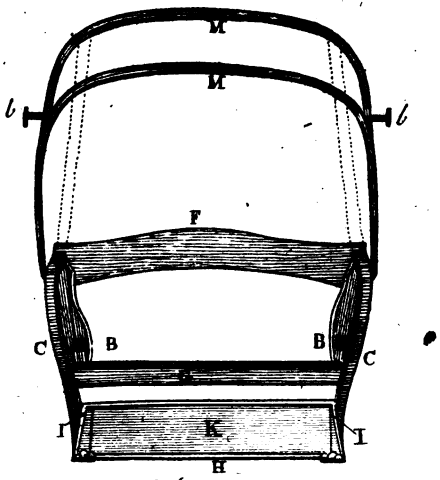

Fig. 6.

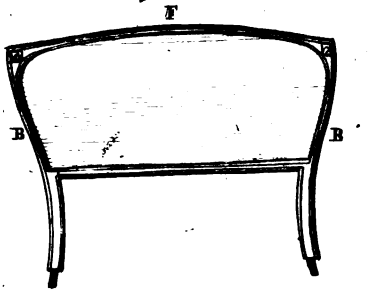

Fig. 5.

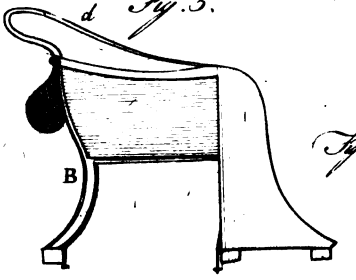

Fig. 4.

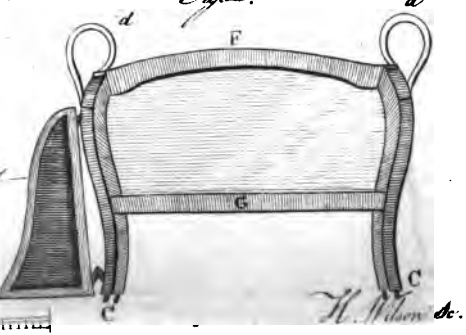

Fig 7

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SECT. 2.

THE HALF-PANNEL OR WHISKEY BODIES.

Half-pannel bodies are frequently of the same shape as the whole, only the pannels terminate at the seat rail. The intention for lightness in the appearance, is the reason for making bodies this way, and which is seldom any other than those of the tub-bottom shape that is thus formed. The only difference in this from the others, is the middle rails, in which the pannels are fixed, instead of extending to the bottom sides, which, with the pillars and bar, are moulded all round.

The common half-pannel bodies are those framed on the shafts or timbers of the carriage, and have no bottom-sides or foot-board thereto, the foot-boards being fixed to the same timbers or shafts as the body, and are simply framed as described in Plate 5, Fig. 4, 5, and 6, being the front, back and side view of a half-pannel whiskey or chair, with the pannels in the framings, and without a sword-case.

If any of those bodies are made with real doors to open, the fore pillars are not framed to the elbow-rail or bottom-side, but to an additional side-piece, which hangs by hinges upon the standing pil-

lar, having a piece framed across the bottom, with a small pannel bradded thereon, the surface of which projects above the other pannel, and is japanned in the same manner as the quarter or upper parts of a coach. When these doors are used, the bottom side, from the standing pillar, must be plated with iron, to supply the necessary support of the fore pillar.

Fig. 7, A real door, hung to the whiskey body, the vacancy on the outside being covered with pannel or leather. The iron-work is marked with small letters, with the intention of shewing the method of fixing it.

a, The iron frame, on which a head is made when intended to be taken off occasionally, having the props for the joints and slats of the same piece.

b, The props for the joints, on which they are screwed.

c, The joints, by which the head is set up or let down at pleasure.

d, The wings, being iron frames, which are covered with strong leather when a head is not used.

e, The body-loop, which is bolted through the framing, having an iron stay in the inside, to support or preserve the strength of the pillar, when the body hangs in this manner.

SECT. 3.

THE VALUE OF BODIES,

IN THEIR NAKED STATE.

To ascertain the value of bodies and carriages separately, in their unfinished state, may, by some, be condemned as an injustice to the trade, and unprofitable to the public; as it may appear that those persons to whom this subject is addressed, would be sufficiently informed, if the value and description of the various carriages only, with their additional requisites in their completed state, were to be published. This is certainly all that many would desire, but it would not convey a sufficient information to those Gentlemen who choose to speculate in building their own way; and as impartiality between the public and the trade will be regarded, no information ought to be withheld.

The profits to the trade are here proportioned in the same manner as every other article in the Treatise, and no disadvantage can be complained of, except that of making the public too well acquainted. One material circumstance in vindication of the necessity of inserting the prices, is the occasion some Gentlemen have to change

the body, or carriage part, of that which they immediately occupy, for one of a different shape, or to supply the place of their old one; and as the various methods of finishing every sort are added progressively in this Treatise, the expence of such alterations, any way completed, may be more easily ascertained.

As the stuffing on the inside of bodies, and the covering with leather on the outside, is not to be mentioned hereafter; that matter, with the necessary iron-work to the body, such as loops, locks, hinges, handles, and door-plates, also the value of carving or moulding, will be included in the value of every body. Whether the quarters and sword-cases are covered with leather, or made with pannel, makes no difference of expence worth notice: those are preferable for service that are covered with leather, and these articles are all necessary to every kind of body: therefore, when executed thus far, may be considered as a rule, to which every other article, such as the lining, painting, plating, steps, blinds, &c. being of various descriptions, are to be added, leaving the choice to the occupier's fancy, of which he may inform himself by a reference, and know what his expence will be when completed.

A chariot body made plain, covered with leather on the roof and quarters, stuffed or prepared on the inside for the lining; the carving and necessary iron-work included, as before mentioned, - - - - - -	£. 25	0	0
Door lights, contracted on the sides, -	2	0	0
Body made with round sides, agreeable to the present fashion, - - - - -	1	0	0
A coach body plain leather, and stuffed on the inside, the carving and iron-work included on the outside, - - - - - -	30	0	0
Round sides to ditto, extra - - -	2	0	0
A sword-case to either coach or chariot, -	2	10	0

When carriages are built for hot countries, the bodies are mostly made with lights or windows on the sides and back, to contain blinds and glasses, in the same manner as when they are placed in the door or front, which increases the price of building as follow:

A pair of side lights to either, - -	£. 3	10	0
A large back light, - - - -	2	0	0
Ditto, divided, - - - - -	2	15	0

The landau or demi-landau cannot have any of the extras mentioned in the coach or chariot, except the round sides. Though none of the bodies are represented in the Plates with the leather on, its value in this, as in the last, is included with the wood, iron-work, and carving; and

and the inside is also prepared for the lining, &c. —The extra quantity of workmanship, the increase of iron-work, and difference of leather and putting it on, make the material difference in the price of those bodies from the others. The only difference besides, which is but trifling, is in the workmanship of putting in the lining, and which is hereafter particularly noticed.

A landau body, with the leather, iron-work, inside stuffing, &c. thereto, - - £. 46 0 0
A landaulet or demi-landau body, as above, 40 0 0

The round sides the same as last.

Chaise bodies being of many different forms, are also of as many different prices, which, owing to their general simplicity, are not very wide from each other. The principal extras, which may be added or omitted to any, are the doors and the sword-cases. The heads, knee-flaps and wings, are not included in the prices, but are only represented, to shew the method of making the wood and fixing the iron-work, but are hereafter stated and fully explained under separate heads.

The expence of caning, and that of pannelling the half-formed bodies, is the same in either, to this extent of building. The difference principally lies in the painting or lining, and which are afterwards mentioned: the following articles

articles are included in the prices here stated, viz. all the necessary iron-work, such as loops and stays; the insides prepared for the lining, and the framings moulded the same as on the other bodies. No leather is wanting, except to the sword-case and the real or sham doors, which, like the quarters of a coach, may be either leathered or pannelled. This being considered a rule, the different methods of finishing may be known, by referring to the separate chapters on lining, painting, plating, and on heads, wings, knee-flaps, &c.

	£.	s.	d.
A step-piece, or half-shaped body, -	8	10	0
A gig body, which hangs from the pillars, -	7	0	0
A common bell or tub-bottom shaped chaise, which hangs from the bottom corners, -	6	10	0
A grasshopper or three-quarter pannel chaise body, - - - - - - -	6	6	0
A whiskey or chair body, - - -	5	5	0
Doors to open on the sides to either of those bodies, - - - - - - -	2	0	0
Sham doors to the sides of either, - -	0	15	0
A sword-case or boodge to any of them, -	1	10	0
A drop-seat box to any of the half-pannel bodies, fixed on the seat rail, - - -	0	7	6

CHAP. III.

FOUR-WHEEL CARRIAGES.

Though, as before observed, this word implies a carriage complete, yet it is usually distinguished as the under part only on which the body is placed. It is the *carriage* which bears the stress of the whole machine, and much depends on its sufficiency. It should be well proportioned in its strength, according to the weight it is meant to support, always allowing rather an over proportion, than running the risk of accidents. A proper application of the iron-work to support the pressure, is a material thing to be attended to; and great care should be taken that no flaws be permitted to pass. The timbers, which are of ash, should be of young trees of the strongest kind, free from all kinds of knots, and perfectly seasoned before used; and as many parts of the framing are obliged to be curved, it is best to select such timbers as are grown to the shape.

The workmanship of a carriage must be particularly firm, and not partially strained in any part, as it is to bear much racking in its use. The timbers throughout are lightened or reduced, for the sake of external appearance, assisted also with

with moulding edges, and carving in some trifling degree, which greatly helps to ornament the whole.

All four-wheel carriages are divided into two parts—the upper and under carriage. The upper is the main one, on which the body is hung: the under carriage is the conductor, and turns by means of a lever called the pole, acting on a centre pin called a perch-bolt. The hind wheels are placed on the upper part; the fore wheels on the under.

Of those four-wheel carriages there are two sorts—the perch and crane-neck, in which there is a material difference in the building and properties: but this does not affect the bodies, as they will hang equally on either. The perch carriage is of the most simple construction, and considerably lighter than the crane-neck; and as the width of the streets in this metropolis gives every advantage to their use in turning, they are the most general. The crane-neck carriage has much the superiority for convenience and elegance, and every grand or state equipage is this way built; but the weight of the cranes, and the additional strength of materials necessary for their support, make them considerably heavier than the others; but their ease and safety in turning in narrow confined places, and also their strength,

render them indispensibly necessary for foreign countries.

The track in which the wheels of every carriage are to run, is generally the same, except when intended for particular roads, where waggons and other heavy carriages are principally used, and leave very deep ruts, in which light carriages must likewise go, or be liable to accident, and are also sure to be heavy in draught. All four-wheel carriages should have the hind and fore wheels regulated to roll in the same track; the ordinary width of the wheels is four feet eight or ten inches: that of waggons or carts generally measure five feet two inches; to which, chaise wheels, being principally intended for the country, are adapted. It is immaterial to what width wheels are set, if used for running upon stones; but on marshy roads, if their exactness is not attended to, the draught is considerably increased. The different heights of hind and fore wheels make also a difference in the length of their axletrees, agreeable to the proportion they bear to one another: the fore wheel has the longest axletree, by one or two inches between the shoulders.

The length of the *carriage* is regulated by the size or length of the body it is intended to carry, but always takes its measure from the two centres of the

the hind and fore axletrees. In general, a perch *carriage* measures nine feet two inches for a chariot, and nine feet eight inches for a coach: a a crane neck *carriage*, on account of the bow for the wheels to pass under, measures, for a chariot, nine feet six inches—for a coach, ten feet.

In phaetons, the variety being so great, there is no rule to go by, as it depends on the situation the body is placed in, and whether intended for one or two horses; but their construction is similar to the rest. Many persons are of opinion, that by contracting the length of the *carriage*, a material difference is made in the draught; but the advantage thereby gained is trifling in comparison with the ease and elegance of a carriage of a proper length: besides, the resemblance they have to common hackney carriages, ought to be a sufficient objection to their use.

The forms of building four-wheel *carriages* (except in the difference of perch and crane neck) are nearly the same in all. The timbers are united to the perch in one general way; as are also the timbers to the cranes; so that one representation of each *carriage*, which is of a chariot proportion, by shewing the views, and describing their several parts, will sufficiently explain the whole: their iron-work is also described, for the better information in that material article.

SECT. I.

PERCH CARRIAGES.

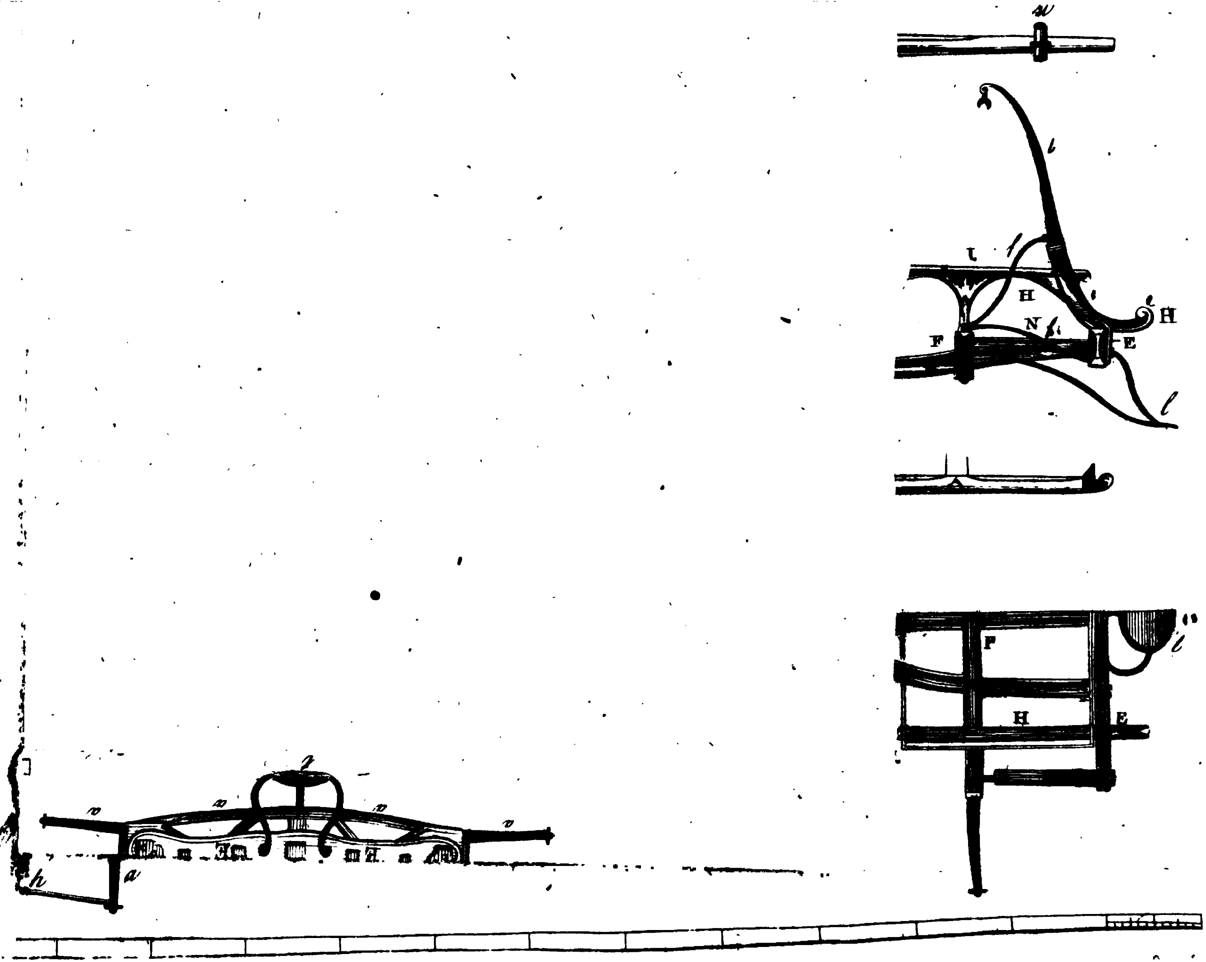
PLATE VI.

Fig. 1, 2, 3, and 4, are the front, the back, the side, and top view of a perch carriage, without a coach-box. The length described is that of a chariot carriage, but the representation will answer for either coach or phaeton: the length of the perch, and the strength of materials, make the only difference.

Fig. 1, is the front, shewing the under carriage united with the upper, the proper length and depth of the fore transom and fore axletree bed, and in what manner the futchels are fixed in the bed, and how the splinter-bar is placed on the futchels with the wheel irons on; shewing the axis, and the manner it is confined in the bed, and the length of the arms on which the wheel goes, the fore transom has the boot and springs fixed thereon; shewing the proper situation of the springs, and how fastened.

Fig. 3, is the side view, principally shewing the perch, and how connected with the other timbers at the hind and fore ends (the ends of the timber

across



H
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across the perch is only seen), the springs and stays in their proper situation, and how the short blocks are placed on the hind, and the boot on the fore end, when used.

Fig. 4, is the half top view, shewing in what manner the timbers are framed across the perch, and how otherwise confined; the hind foot-board and boot are lightly represented, so as not to prevent the sight of the under framings.

A, The perch, which is the main timber of the *carriage*, by extending through the hind and fore spring transom or bars. By it the principal part of the upper carriage is supported. The hind part is supported and united to it by means of hooping two extending timbers, called wings, on the side. The fore end is fixed or united to the perch by means of a strong piece hooped at the top, and framed through the fore transom, called a hooping-piece: but some carriages have a horizontal wheel in the front, the same as the crane-neck *carriages*; and these have no hooping-piece to the perch, but are secured by means of side plates. Those on the general principle have, at the bottom in front, a flat piece, left extended, called a tongue, which goes through a large mortoise in the fore axletree bed, and through which the perch-bolt passes: its use is to keep the fore axletree bed steady in its place.

Some-

Sometimes the perch is made of a bent form, called a compass perch, for the purpose of admitting the body to hang low, or to form a more agreeable line to the shape thereof: those perches are of a very ancient form, but seem to be reviving with considerable improvement from their original shape, and are likely to become the prevailing fashion; for the information of which, a compass perch is introduced between the two views, to shew their present shape: when the carriage is intended for a whole or horizontal wheel, the perch has no hooping piece, but is bolted by the plates at each end to the inside of the transoms.

Plating with iron the sides of perches, is a great improvement thereto, and is now most generally done, and always must be to those compass perches, if required to be any way light in their appearance, as the strength of the timber is so much reduced by cutting them to this shape.

To the straight perch, iron plating on the sides is also a great addition, as it will admit the straight timbers to be so much reduced that a sufficient strength is preserved tho' but half the usual size; for the plates this edge-way fixed to the sides of the perch, will support ten times more than if flat-ways on the bottom, which is the method of plating a perch in the plain or common way; and many of those carriages which are made up for

sale

sale have even the bottom plate omitted; but the certain consequences of this superficial method is the sinking or settling of the perch, whereby the carriage is contracted quite out of its form, to the injury of its use and appearance, and there is no remedy but by a new one.

B, The hind hooping wings, so called from their extended form. They are the principal support of the hind framings, being hooped on the sides of the perch, and extend to the hind spring transom through which they are framed: they also help to support the axletree bed, which is bolted thereon.

C, The fore hooping-piece, is a large timber hooped on the top of the perch, and which unites the fore end to it, being strongly framed through the fore transom or spring bar; extending to the out-circumference of the horizontal half wheel, which it also helps to support when there are no fore wings; on it the budget-bar rests, and is fixed thereto.

D, The fore transom or fore spring bar, is the most essential part of the cross framings. It is a strong timber fixed to the perch by means of a hooping-piece, or otherwise receives a tenon of the perch if a hooping-piece is not used, which perch is also strengthened by means of plates bolted to their sides and to the transom. The fore or under carriage is confined hereto by means of

of a large round iron pin, called the perch-bolt, passing through its centre: on the bottom is a thick flat plate, made flush to the edges, called a transom plate: on the ends the springs are fixed; and on the top the boot, or the block that supports it, is placed: between the springs and the boot, the usual coach-box also is fixed.

E, The hind transom or hind spring bar, something similar in its use with the fore transom, but not required to be of such strength. In it the perch, and the timbers which run parallel with it, are framed; and on the end are the hind springs fixed, the blocks or pump-handles are placed on the top, and the footman's step bolted on the outside.

F, The hind axletree bed, a strong timber which receives the axletree. It is fixed by being bolted to the perch, and the wings on which it is lapped or sunk. In this, and in the spring bed, are two small timbers tenoned, called nunters: one of the bearings of the blocks rests on this bed, as also do the spring stays. The bottom is grooved to receive the axletree, which is called bedding for the axletree, but is mostly bedded at the ends only, excepting when the axletree lies above the perch, or when the perch is framed through the bed, in which case the axletree is bedded all the length of the timber. At the two ends of this

this timber are left projections called cuttoos, which cover the top or back end of the wheels, to shelter the axletree arms from the dirt, which would otherwise get in behind the wheels, and clog them.

G, The budget-bar, frequently called a horn-bar, from the original shape thereof; but it is now only a straight timber, on which rests the boot or budgets, or the blocks that support them. It has only a bearing in the middle of the perch: on it, at the ends, which are sometimes socketted, the fore spring stays rest, for which its use is principally calculated, assisted materially in its strength by an iron stay, which fixes to the bottom of the perch and at each end of this bar.

H, The hind blocks, which are called pump-handles: when further extended than what is here represented, they are frequently called raisers; as their use is only to heighten the platform from the hind framings, that the appearance may be light, and that the footman may be sufficiently raised according to the height of the body: they are bolted on to the axletree bed and spring bar; and, to help their too heavy appearance, are often neatly ornamented with carving.

I, The foot-board, or platform, on which the trunk, the cushion or the servant stands, is a

flat thick elm board, bolted on with the blocks, to which it is also screwed.

K, The wheel piece, which is a casing on the horizontal half-wheel plate, of no other use than to ornament the iron, which it conceals, being screwed from the bottom of the plate, and is fixed a little way in the transom.

L, The fore block, an ornament at the front part, sometimes placed perpendicular, and sometimes horizontal: it is fixed on the top end of the fore hooping-piece, and supports the boot or budget in the middle of the front, to which it is bolted when perpendicular, but, when horizontal, this block is mostly united to the side blocks or raisers of the boot.

M, The boot, a large square box, made of strong elm boards, nailed and screwed together, having a door in the front, which door should be made framed, and boarded and confined by a bolt and thumb-nut. The surface of this boot should always be covered with a russet or japanning leather: it is bolted across the transom, the boot bar and fore block; and is sometimes raised on side blocks, to lighten the appearance of the fore end.

N, The nunters, are two short pieces of timbers fixed under the block, and tenoned in the

the axletree bed and spring bar, to assist their strength, and keep them more securely together.

O, *P*, *Q*, and *R*, The fore or under carriage, united to the upper carriage by the perch bolt.

O, The fore axletree bed, which is required to be a large strong piece of timber, in which the fore axletree is bedded: on this the upper carriage rests: it has a large mortoise near the top, in which the perch tongue is placed. In this timber the futchels are fixed: it is also cuttooed on the ends the same as the hind bed.

P, The futchels, are two light timbers, fixed through the fore axletree bed, nearly of the shape of the hind hooping wings; contracted in the front, to receive the pole, which part of the futchels is called the chaps; but widens towards the hind end, on the top of which the sway bar is placed; on the fore ends and across the chaps the splinter bar is fixed. They are framed in a slant direction, to give a proper height to the pole; but when a whole wheel is in the front, then the futchels are framed in a horizontal direction, and are made to rise in a cant from the front of the horizontal wheel, otherwise the pole must be made compassed, to raise it to a proper height.

Q, The splinter bar, is a long timber, to which the horses are fixed, and is fixed on with

roller bolts near the fore end of the futchels, from which it is a little raised, to admit the pole being placed in the chaps: on the ends are sockets with eyes, in which the wheel irons are placed, and also from thence to the axletree arms, contracting the splinter bar tightly back to oppose the tugging by draught, which is taken from the roller bolts, at the ends and middle.

R, The front felly piece, is a short part of the same circle as the upper wheel plate, made to fill the space between it and the futchels, to which it is bolted. Its use is to make a firm bearing for the upper carriage to work on; so that in whatever direction the fore carriage may be, a steadiness is always preserved.

S, The sway bar, is a timber, forming part of a circle made for a bearing against the perch, to the extent of the locking of the fore wheels. Its use is to preserve a steady action of the fore carriage: it is bolted on the back ends of the futchels, usually plated on the top ends with iron: the middle is lined with hard leather, to prevent a noise in use.

T, The pole, a long timber, which occasionally is placed in the futchel chaps, being nicely fitted therein, and is confined by two plates, the one bolted at the bottom in front, and the other at the top, at the back end of the chaps: the security is also assisted by a wooden pin called a gib, which

which is placed across the futchels, and in a staple which is in the pole: an iron pin also goes through the futchels and the pole at the fore end; on each side of the pole the horses are placed, and strapped to a loop at the fore end, called a pole-ring: its use is to conduct the fore carriage, and may properly be called a carriage lever.

U, The pole-gib, is a small piece of wood, made flat at the bottom, and rounding at the top, to fit the staple in the pole, which it keeps from rising up at the fore end, nailed on by a loose strap to the futchels, and kept in its place by another strap nailed on the opposite side, which is hitched on a brass or plated button.

Although the iron work and its properties are separately described in the Plate, yet the explanation will be more clear by pointing out here their situations, which is done in small letters placed against the different parts, which are named as follow:

a, The hind and fore axletrees.
b, The hind and fore springs.
c, The perch and axle-hoops.
d, The axletree clips.
e, The transom and wheel plates.
f, The spring stays.
g, The splinter bar sockets.
h, The wheel irons.

i, The

i, The side perch plates.
k, The splinter bar rolls.
l, The footman's step.
m, The sway bar plates.
n, The budget plate.

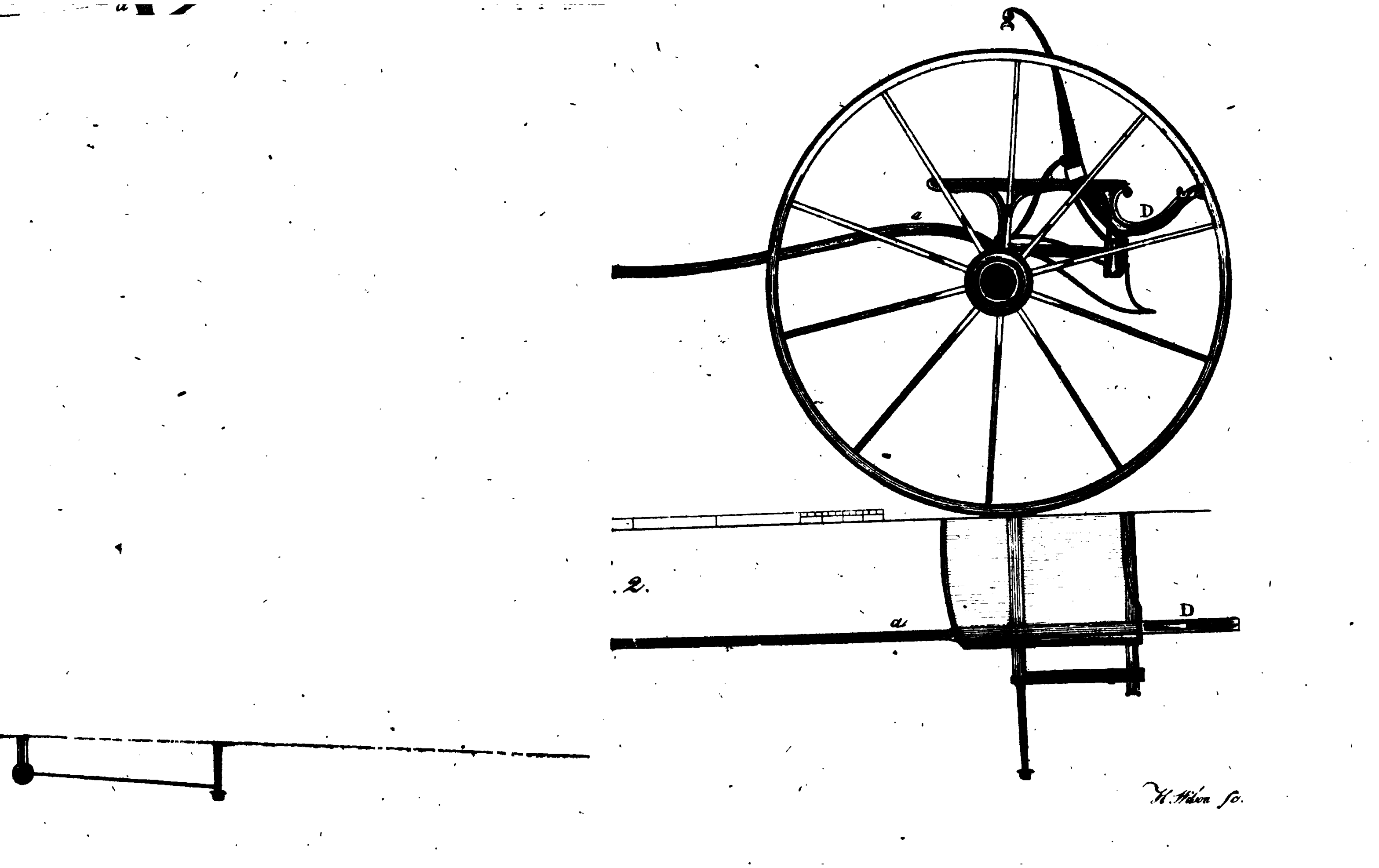
SECT. 2.

CRANE-NECK CARRIAGE.

Fig. 1, 2, and 3, represent a chariot crane-neck carriage, in the side, the top and fore end views, with the coach-box, and a saloon or luggage boot, in their proper situations. The wheels are added to this carriage, shewing their proper height and distance from each other, commonly called the track; also the circumference which the fore wheels take in turning, by which the bows of the cranes are regulated in their distance, and in their height, by the height of the wheels.

The timbers of this carriage are of the same description with the last, excepting the perch and hooping timbers, which in this sort of carriage are not used. The hind and fore ends are fixed to the cranes, which makes the bearings more steady than those of a perch carriage. The addition of

wood



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wood work to this carriage from the last described, is what may be added to either, and is as follows:

A, The cross framings, called wings or fore nunters, which are framed through the fore transom, and support at the two ends the horn bar and fore bars.

B, The side blocks, bearing on the transom the horn and fore bars, to which they are confined by bolting.

C, A whole wheel front, which is necessary for all crane-neck carriages, for the purpose of preserving a steady bearing to the fore carriage while turning round. This sort of fore end is also frequently used to the perch carriage, and is a great improvement thereto.

D, The hind blocks, the same as *H* last described, only are made longer behind, in order to assist the servant in mounting, and are called pump handles.

E, The platform or luggage-boot, made only as a platform, being a thick elm board, with ledges screwed round to strengthen it, and to receive the irons which form the shape for the sides, and are bolted on the bottom, having two pieces fixed upright to support the irons in the middle, having also two slats or hoop-sticks fixed across, which loop in staples fixed in those upright pieces to support the cover in the middle.

The

The coach-boxes, which are of two general sorts, such as the Standard and Salisbury, are shewn apart, and described at *I, K, L, M, N, O, P*, which instructs the method of framing them;—the Salisbury is represented in perspective; the other, in two views with the carriage.

F, The fore standards; the main pillars of the coach-box, which support the seat, and are fixed on the fore transom by plates, and are also supported by a stay bolted to the horn-bar.

G, The stays, framed in the standards, and curved upwards to receive the foot-board, which is fixed thereon, and strengthened by an iron compassed stay.

H, The box bars, framed in the standards to keep them steady at top.

I, The fore foot-board, for the coachman to place his feet against, having his purchase assisted by a ledge screwed thereon. The foot-board is bolted on the stays, which are confined and strengthened by it.

K, The brackets or ledgers, which are carved, and fixed on the foot-board for ornament only.

L, The slats or ribs, firmly screwed or nailed in the bottom and top, which forms the boot behind, and supports the leather that is strained round them.

M, The

M, The bottom, made of two strong elm boards placed across each other, and to which the other timbers are fixed, assisted also with iron-work.

N, A strong board fixed on the top bar, projecting back, for the ribs to be fixed into.

O, The two upright stays, which form the boot in front, and support the other stays by being bolted thereto.

P, The front, which is always boarded over the vacancy, for the leather to be placed upon.

The iron-work to this *carriage*, which is different from the last, is only here to be described, and that also in small letters.

a, The cranes, with single bows, and a little formed on the hind sweep.

b, The back stays, which support the coach-box.

c, The compass-irons, which support the foot-board and stays.

d, The seat-irons, with a stay to each, on which the cradle for the seat is to be fixed.

e, The standard-plates, with which the coach-box is fixed to the transom, by clipping on it between the boot and springs, and is secured by two bolts to each.

f, The whole or horizontal wheel-plate, fixed to the bottom of the fore transom and horn-bar, for the fore carriage to lock steady by.

g, The luggage boot-irons, with which the boot is made or formed on the side, having the vacancy covered with leather.

Those two *carriages* are represented and described principally as a post-chaise or chariot; but both the representations and descriptions will answer for coaches and phaetons, either perched or crane-necked: the difference lies only in the length, and not in the form; which difference may be known, from the further descriptions given of carriages in the finished state: the boots, the coach-boxes, and the raised hind and fore ends, are only represented here, for information how they are placed when intended for coach or chariot.

CHAP. IV.

TWO-WHEEL CARRIAGES.

Those carriages have the advantage of all others for simplicity and lightness; but in this sort of carriage there is more risk than in those that are four-wheeled, particularly if the horse is not tractable and sure-footed. That which makes the variety of this sort of carriage, is the method of placing the bodies, whether hung from springs, or fixed on the *carriage*, which is decided principally by the fancy of every occupier: the generality fall under the description of curricles, gigs, whiskeys, or chairs; but that wherein the principal difference lies, is the curricle, being formed for two horses abreast, which at present is the most fashionable carriage in use; the gig from the whiskey also differs materially, the whiskey being constructed on the most simple plan, with the body united to the carriage, while the gig exhibits a greater portion of fancy, having the bodies hung in various directions; it is by the form of the *carriage*, and the method of placing the body, that they are named, as gig, curricle, &c.

Those open carriages are generally intended for the country, and are made longer on the axle-tree than in other carriages intended for town use only, in order that the wheels may fall or go in the waggon tracts.

The strength of the *carriage* in this, as in all others, is to be regulated by the size of the body which it is meant to support, as also the places in which it is to be used, as in rough roads an addition of strength is required in building. The timbers are usually of ash; but a preferable method of building, is to make the shafts of a foreign timber, of the West-India growth, called lance-wood, which is of sufficient strength even when reduced to half the size of ash, and is so remarkably elastic as to give great ease to the rider, and always preserves the shape; whereas the ash shafts are obliged to be made clumsy, and soon settle by the weight, and besides require to be assisted in their strength with iron-plates at the bottom, which cannot at all be applied to the lance-wood shafts, on account of their elasticity. The draught is much preferable when taken from a splinter bar, which yields to the motion and pull of the horse; and the nearer to the axle the fixtures used to draw by are placed, so as not to be very low from the purchase, the lighter is the draught. The *carriage* should

should be so made as that the axletree may be placed nearly on an equilibrium; so that when the passengers are in the body, the weight may not exceed 30 lb. on the back of the horse; observing also to have room at the step, so as not to be obstructed by the wheel on entering the carriage.

The variety of those two-wheel carriages can be understood better by the representation given on the plate than by description, as they are all similar in their construction, though very different in their use: but, compared to other sorts of carriages, they are very simple. The materials of which they are composed are but few, and their purposes nearly the same in each; so that one description, assisted with the general representation in the plate, will furnish every information necessary on that subject.

PLATE VIII

Fig. 1, 2, 3, 4, 5, and 6, The side and top views of a curricle, gig, and whiskey *carriage*, being the three most generally in use.

Fig. 1, and 2, The side and half-top representation of a curricle *carriage*, framed wide and long, for

for the purpose of admitting the body to hang between, which is the present rule of building.

Fig. 3, and 4, A gig *carriage*, in the same views as the curricle, with the wheels added, shewing their distance apart. The body for this representation is supposed to hang above the shafts; therefore the *carriage* is not so long or wide between the framings, which is always prepared according to the method or fancy of hanging the bodies. Those *carriages* are made to either pattern, and for either use, excepting the shafts to the gig, and the additional framing at the fore part of the curricle.

Fig, 5, and 6, The same views of a whiskey or chaise *carriage*, for the building of which there is but one rule, the body being framed or fixed on the shafts, having the foot-board and bottom also secured thereto.

Fig. 7, The shafts, used to a one-horse four-wheeled carriage, which hang loosely on the horse, answering the purpose of a pole to turn or lock the *carriage* by.

A, The shafts, which are the side framings and principal part of the *carriage*, by which it is supported by the horse: they are regulated to a general width at the point, measuring two feet three inches across; the length from the bar of draught, is six feet six inches, and the height

in

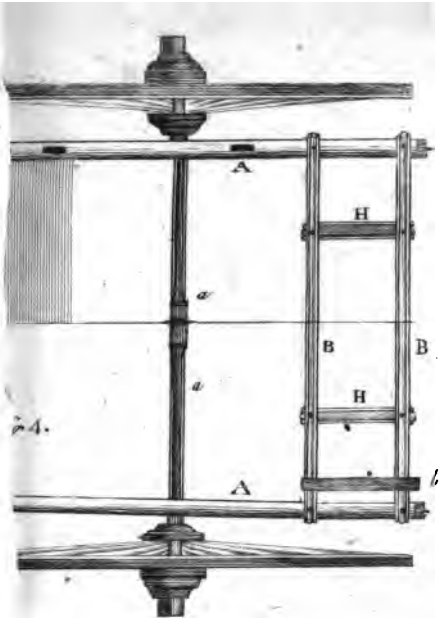


Fig. 4.

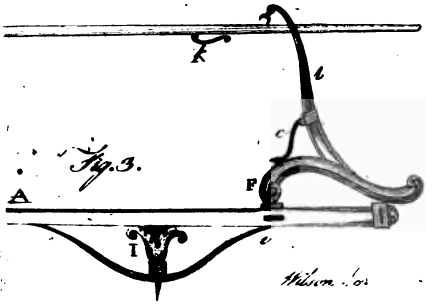


Fig. 3.

in proportion to that of the horse intended; but are in general made to those of a middle size, or 15 hands: those to a curricle, are only properly called shafts, that are applied when one horse is used to that sort of *carriage*; the others ought only to be called side-framings; in those, as also in the proper shafts, the cross bars are framed, and are tenoned, mortoised or lapped, as the builder's judgment may direct, assisting also, where strength is required, by plates, uniting the bars with the shafts, particularly in the curricle at the fore ends, which cannot be made too safe.

B, The cross framings, called hind or fore bars: those on which the springs are fixed, are called spring bars; the front bar to a single horse *carriage*, is what the draught is mostly taken from, by means of a splinter hung thereto; the additional fore bars to a curricle, are to assist the strength, and form a bearing for the pole, which by a close leather brace is fixed in sockets at their bottom.

C, The splinters or splinter-bars, hung on the fore bar to chairs, or in loops to curricles, having iron-work at the ends called sockets, for the traces to be fastened to.

D, The ladder-prop for the curricle, which it supports while standing, or when the horses are putting to: it is fixed on the fore bar, with jointed

ed iron-work, which, when the horses are put to, admits it to be thrown back to the back bar, where it is secured by means of a spring catch, or a strap and buckle.

E, The brackets, the foot-board, and the bottom of a whiskey, which are fixed on the shafts, and constitute a part of the carriage.

F, The hind and fore blocks, on which the springs are placed, and are chiefly used as an ornament to this sort, as well as to phaeton carriages.

G, Small blocks, for supporting a platform, which they raise above the bars, and which lighten their appearance, and may be used or omitted at pleasure.

H, The cross framings, called nunters, which serve to strengthen and fill the space between the bars.

I, The raisers, which support the shafts from the axletree; sometimes are only turned, and sometimes carved, to ornament the carriage.

a, The axletree.

b, The springs.

c, The spring stay.

d, The spring jacks.

e, The main or bottom stays, terminating in loops at the curricle's fore end, and at the fore bar in a chaise.

f, The

f, The ladder joints.

g, The steps, double and single.

h, The splinter sockets.

i, The curricle sockets for shafts.

k, The tug-plates or stops.

l, The hooks by which these shafts hang on the splinter bar.

m, The hooks the traces are fixed to.

n, The breechen staples.

PRICE OF CARRIAGES.

On account of the great variety in the form and size of carriages, it would be difficult to affix the exact value of every different description of them; but, to take them in the most general way they are built, and omitting some particulars to be by themselves treated of, they may be reduced to a rule, regulating them to five classes, viz. the coach, the chariot, the large, the middle and small sized phaetons. The two former only have coach-boxes; the rest generally have boots, and also raised fore and hind ends, properly called platforms—Therefore, to reduce the price of carriages to any certain rule, those articles must all be excepted; and a reference to the descriptions and prices of them, which are afterwards stated, will enable the proprietor to know how to add any of those requisites, and be a competent judge of the value and form of whatever kind of carriage his fancy may lead him to make choice of.

Coaches and chariots are built exactly similar to each other; the only difference is the superior strength of the materials.

Phaetons have a great similarity to them; but the situation of the springs, which are placed in various

various directions for the body to hang from, makes the appearance the only material difference from other *carriages*; so that, by excepting the blocks and budgets from them, they will be reduced to the same principle as the others.

The workmanship is nearly the same in value to all *carriages* on the plain system. The materials are somewhat reduced in their value for the lesser *carriage*, and bear the reduction of one-tenth from each other. Their value, when executed to this extent, is what is reckoned the first charge or rule to follow; the wheels, the boots, the coach-boxes, the raised hind or fore ends, the blocks for the springs, and also the painting, are added afterwards, to know how to complete them either way.

The additions to two-wheel carriages are very few above what is represented in the plate: the platform and budgets behind the dashing leather, and the odds of double steps before, are the principal of the additions, and which are particularly mentioned hereafter.

The Timber, Carving, Iron-work, and Making of Carriages, without Blocks, Boots, Coach-boxes or Wheels.

	Coach.		Chariot or Post-Chaise.		Phaetons. Large.		Phaetons. Middle.		Phaetons. Small.	
Perch carriages, including the timber, &c.	£.	s.	£.	s.	£.	s.	£.	s.	£.	s.
as above	24	15	22	5	20	0	18	0	16	4
Extras to do.										
The side of the perch plated with iron	3	3	2	15	2	10	2	2	1	16
A whole-wheel front	2	10	2	5	2	0	1	15	1	10
A half-wheel front	1	5	1	3	1	0	0	18	0	15
Crane-neck carriages,	41	0	36	18	33	10	29	18	26	18
Extras to do.										
The cranes having double bows,	3	3	2	15	2	10	2	2	1	16

	Curricle.		Gig.		Whikey.	
	£.	s.	£.	s.	£.	s.
Two-wheel carriages,	15	0	11	11	9	0
The curricle, with shafts for a temporary use,	17	3				
The gig-made curricle, for frequent alternate use,			16	0		
Whiskey made curricle,					13	0

By this statement, the value of every kind of *carriage* is to be obtained any way completed, by adding thereto whatever conveniences or ornaments may be thought necessary, and which are afterwards distinctly treated of.

CARVING.

This art contributes more effectually than any other part of the work to the beauty and elegance of a town or state carriage. In common carriages, all that is meant by carving, and which scarcely deserves the name, is the finishing the ends of the timbers with scrowls, and the edges with mouldings. If any carving is bestowed on those plain carriages, it is on the blocks or raisers, whose front views are more conspicuous than any other timbers, and requires some degree of fancy to reduce their bulk to any agreeable appearance.

The only persons at variance with this art are the coachmen, who, from the greater difficulty of cleaning after use, resent the extra trouble they are put to, and with the mop and brush endeavour to destroy those ornaments with which the carriage is beautified.

On carriages for common use, the more simple and plain the ornaments are, the better, so as a good design is but preserved, leaving the painter's pencil to effect what is omitted in the carving, which is a good substitute to a common, but a very poor one to a superior carriage. The carving being a necessary ornament to the timber-work, its value is always included, and proportioned to the quantity contained, and the excellence of its execution, and which must depend on the sufficiency of the artist. The different representations of blocks in plate 12, will tend to give some information of the price of carving, as the timber work is the same in expence for carved as for plain blocks: the increased amount on blocks is the consequence of the superior ornaments, which may be increased to any value.

CHAP.

CHAP. V.

IRON WORK.

The articles of this sort are excessively numerous, and are manufactured by a variety of different mechanics, such as spring, axletree, step and tyre smiths, &c. which will all here be considered under one head, and the most essential articles treated of separately, without enumerating every trifling article that is occasionally used, and which would be almost impossible to select.

This, next to the timbers, is what ought to be particularly attended to, for the advantage of good materials and workmanship, which together greatly add to the preservation of the carriage. The whole of the iron-work requires to be made of particular tough iron, and fitted with great exactness; taking care that each gives its proper support without straining or twisting, and that its substance be adequate to the weight it is meant to carry. All the external parts should be well filed, and formed in whatever shape the quality of the carriage requires.

The iron-work forms and is the principal part of the *carriage*, both for value and use. Its properties cannot

cannot be too well attended to. For the purpose, therefore, of giving every information on that material article, it is here separately represented, although included in the former value and representations where its connections with the timber are described; but as many articles in iron-work would be found wanting to some future alterations, the separate value of the most material or likely, will be given apart from the timbers.

SECT. I.

SPRINGS.

Springs, by which, only, riding is made comfortable, requires the greatest attention to their properties, otherwise their effect is materially injured. They should be all manufactured of a well prepared steel, properly tempered. The greater the number of pieces or plates there are, confined within the size of the hoop, the better; and the longer the spring is, the more easy and elastic its motion will prove. Those that are the least erect, and of course that incline most to the weight they carry, and that are also the longest from the bearing or stays, have a superior advantage.

their

Their forms are various, according to the purposes for which they are designed; and they are named according to their shape—such as the S, the C, the French horn, the scroll, the worm, the single and double elbow or grasshopper spring; which are all shaped according to the situation in which they are to be placed.

The springs all support the weight at their extremities, by means of loops or shackles; and their elasticity is only from the hoops, at which part the plates are all made thickest, gradually tapering thinner to their extremities, and shortening about four inches in each plate from the hoop, where the bearing for the spring is fixed. Those that are placed in an erect form, are obliged to be supported with iron stays, which clip the spring at the hoop; those that are placed horizontally are supported from the middle, and play their whole length; those that are made of a circular form, have frequently no stays, but are well secured at the bearings. Short light springs, which contain but few plates, have frequently no hoops; but the plates are confined with a small rivet, and the bolts with which the spring is confined to its bearing.

The variety of springs in use could not all be represented, nor the different values of them ascertained with accuracy. What is represented

in the plate, will convey sufficient information of those generally now in use.

COACH AND CHARIOT SPRINGS.

Fig. 1. The usual form of springs used to carry the body of a coach or chariot. This is called an S spring: it is made with a stay *a*, which is rivetted within the hoop *b*, and clips at bottom the fore or hind transom, and is there fixed by this bolt *c*, and is supported at the hoop by a stay *d*, which rests on the hind axletree bed, or budget bar; a stay *e* also clips or bolts through the spring at bottom, and clips or unites in a cup with the other; to oppose the pressure, it has a shackle *f* bolted loosely on the top, for the weight to hang by.

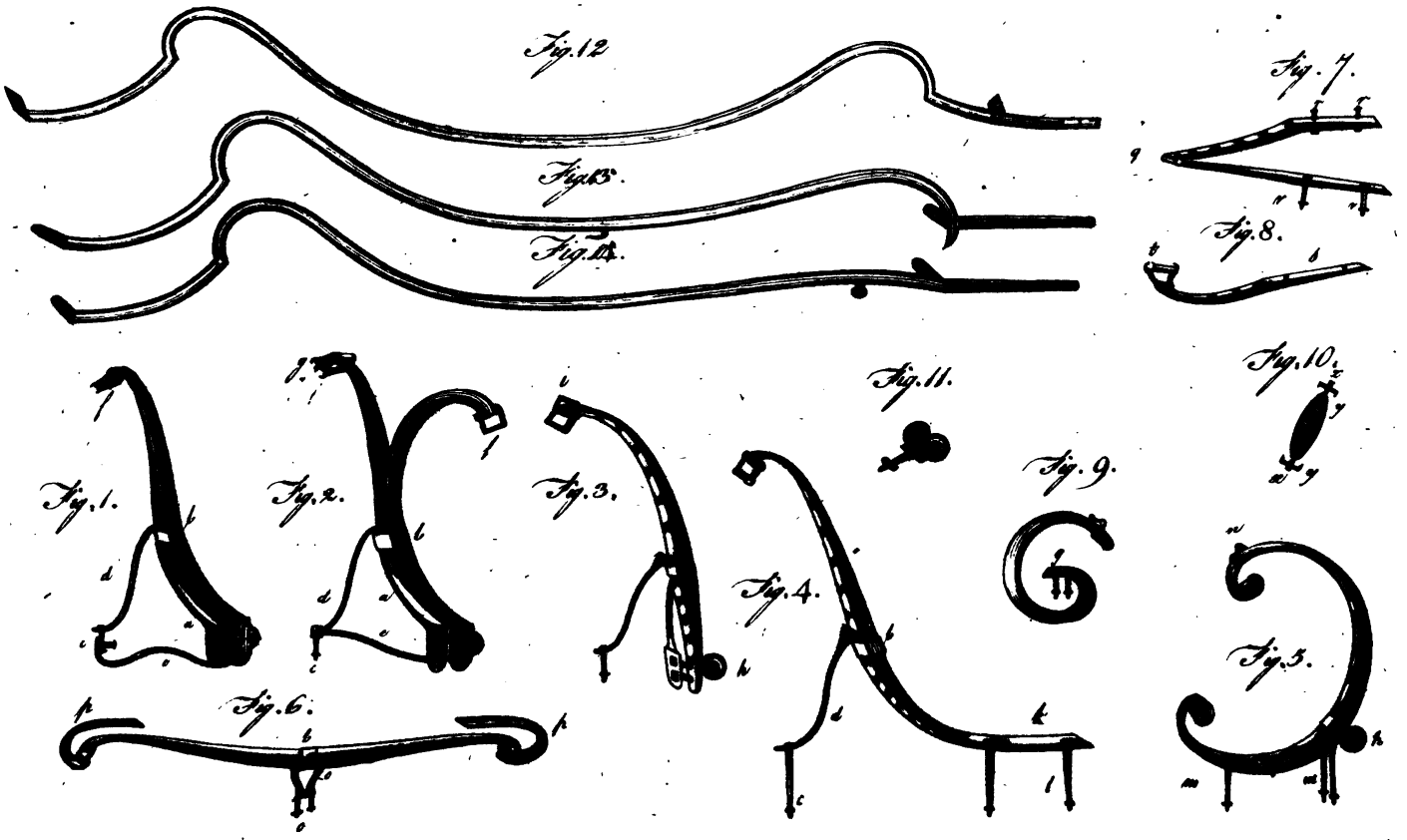
The difference in expence of those springs betwixt coach and chariot, is on account of their different sizes; the coach has one or two plates more than the chariot, and is made somewhat wider across the back.

DOUBLE SPRING.

Fig. 2. The form also of a spring for a coach or chariot: it has united to it at the back plate an additional spring, which turns the reverse way, to carry separate things, such as the budget,

or

Plate IX.



Wilson sc.

or hind platform; having a double shackle at *g*, the one to carry the body, and the other the boot or platform, the reverse spring has only to carry the hind part of the same boot or platform. The stays and loops marked *a*, *b*, *c*, *d*, *e*, *f*, are for the same purpose as the former, the bottom stay being only differently formed; the former clips, and this cups on the bed or bar.

GIG SPRING.

Fig. 3. This spring carries the weight, and is fixed in the same manner as the others: the form is frequently used for either of the above purposes, but is here represented only as a gig or curricle hind spring, having a jack at the bottom *h*, and a double loop shackle at the top *i* for the brace, which is fixed in it, and extends to the body loop, from which it returns through the upper loop, and down the back of the spring, and is secured in the jack at the bottom; this requires no stay at the bottom part, it being fixed on the bar near the shaft, which answers the same purpose.

LONG-TAIL PHAETON SPRING.

Fig. 4. This spring has a long flap *k*, and is supported on carved blocks, to raise and ornament

them, on which blocks they are fixed by bolts, which pass through them and the cross-framed timbers. Those springs are obliged to be stayed on the inside, at the middle, and top, to prevent twisting sideways; they are supported at the hoop in the same manner as the rest, by a stay, which takes its bearings on the block.

SCROLL SPRING.

Fig. 5. This is a peculiar formed spring, for ease, and is used to various kinds of carriages. It rests and is fixed on a long block for phaetons, or on the two bars only for coaches, &c. at the bearings *m m*; the bottom is sometimes turned up in a scroll form, for ornament only, in imitation of the upper part; the brace is hung by a shackle, or placed round the spring, and, passing through a loop *n*, is fixed in a jack at the bottom.

GRASSHOPPER OR DOUBLE-ELBOW SPRING.

Fig. 6. This is a spring used to light whiskeys or chairs. It is fixed on the axletree by a Jew's harp staple *o*, which staple is united with the spring hoop, and bolts through the axletree; it supports the weight at each end by one or two loops *p p*, which are fixed at the bottom of the shafts; it is mostly fixed at the one end, but has room

room to play at the other. Those springs most generally have only one loop at the hind end, in which it is fixed, and the other end bears on a thin plate, fixed to the bottom of the shafts.

SINGLE ELBOW SPRINGS.

Fig. 7. A pair of single elbow springs uniting together at the extremities by looping one on the other, and are there confined by a small round bolt; they sometimes have no hoops, but the plates are confined by a small rivet, and the two bolts *r r*, which fix them to their bearing places; those are mostly designed for phaeton or gig fore-ends; frequently one of them only is used, having a loop in place of a double spring.

LOOP SPRING.

Fig. 8. This is sometimes fixed on the end of the bottom side, to carry the body, instead of a solid iron body loop; to give additional ease to the rider, it is bolted on at the bearing *s*, and receives the braces at the shackle *t*.

FRENCH-HORN SPRING.

Fig. 9. This is a circular spring used to the fore part of a curricle or gig. Sometimes the brace fixes

fixes to a shackle, but generally is placed round the back through the loop *u*, and is confined by the bolt *u*, which fixes the spring to the fore bar.

WORM OR SPIRAL SPRING.

Fig. 10. This is a light square piece of steel, turned in the shape of a barrel, which is placed between the double of the main brace, to give ease to the passenger in riding; it is secured within the brace by two screws *x x*, having two plates *y y* placed between the screw and the brace.

SPRING JACK.

Fig. 11. This is a small engine fixed to the bottom of the spring. Its use is to receive a brace when placed round the spring, which brace is fixed to a spindle that is turned with a wrench upon the outside, and is there confined by a small ratchet wheel and ketch. Its use is to heighten or lower the body.

PRICE OF SPRINGS.

The value of springs is in proportion to their sizes. The shackles, the bolts, the loops, and stays, are represented with the springs; and being of necessity used with them, are included in the following statements: The jacks, though represented, being a matter depending on choice, are separately valued. The general height or length of springs is about three feet; and they are made light or strong, as may be found necessary to support the weight of the body; and as the same form of a spring may be used to different carriages, stating the value of two or three different sizes of each form that is used, will make the information sufficient for general use.

COACH or CHARIOT.

Fig		Coach. £.	s.	Chariot. £.	s.
1.	A pair of S formed springs, with shackles, stays, and bolts, complete,	3	18	3	6
2.	A pair of double returned springs, to carry body and boot, shackles, stays, &c. complete,	6	10	5	10
5.	A pair of large scroll springs, for a travelling carriage, with clips and shackles complete,	6	6	4	18
8.	A pair of spring body loops,	1	15	1	10

PHAETON, GIG or CURRICLE.

		Large. £.	s.	Middle. £.	s.	Small. £.	s.
3.	A pair of whip springs for a curricle or gig,	3	10	3	3	2	15
4.	A pair of long-tail'd high phaeton springs, with the front stay, shackles, and bolts,	4	4	3	10	3	0
5.	A pair of scroll springs, for phaetons,	4	10	3	15	3	3
6.	A pair of grasshopper whiskey springs, with loops and shackles complete,	3	0	3	0	2	10
7.	A double pair of elbow phaeton fore-springs,	1	15	1	10	1	5
7.	A single pair of ditto, with loops,	1	5	1	1	0	18
9.	A pair of French-horn springs, for a curricle or gig,	1	15	1	10	1	5
10.	A pair of worm springs, screws and plates complete,	1	10	1	5	1	4
11.	A pair of spring jacks,	1	0	0	18	0	15

In this statement, the value of almost every kind of spring generally used is ascertained. Their value is regulated by their length, to which also the plates are proportioned in number or thickness; upon an average, they may be computed at 1s. 6d. the inch for the small, 1s. 9d. for the middle, and 2s. for the large sized springs; the measure to be taken from the bolt at the bearings, to the centre of the top eye.

SECT. 2.

AXLETREES.

The axletrees of the carriage, on which the wheel revolves, are but of two sorts: the one is made flat, and called a bedded axletree, it being sunk in the timbers; the other is made of an octagon form, flat only at the ends where they are bedded. The arms, which pass through the wheels, should be made perfectly round, and somewhat stronger at the shoulder than at the end, which is screwed to receive a nut, through which and the axletree the lince-pin passes, to keep all tight. The nuts are made with a collar at the face, and a temporary collar or washer is drove on to the back of the arms, which forms two shoulders for

the wheel to wear against, and helps to preserve the grease from running out, and to prevent dirt from getting in.

The axletrees are the principal or only support of the carriage, on which every attention and care should be fixed in the selection of good iron, and to see that they be well wrought, and of sufficient strength, rather going to the extreme, than risking the life of the passenger by the oversetting of the carriage, which mostly happens when an axletree breaks. By the axletrees also the wheels are regulated to any width at bottom, to suit the track of the roads in which they are to run, and are confined in the carriage by means of clips, hoops, and bolts, which are all described in plate x.

The shape of the axletree between the shoulders varies according to the situation they are placed in, or the form of the timber with which they are united; those are the most firm that are flat bedded in the timber.

THE AXLETREE BOX.

Those are frequently called long-pipe or wheel boxes: they are long caseings fitted close to the arms of the axletrees, and securely fixed in the wheel stocks or naves; they are usually made of wrought

wrought sheet iron, of a substance proportioned to the weight of the carriage: their use is to contain a supply of grease, and prevent the effects of friction, whereby the wheels are much assisted in their motion. These succeeded the short cast iron boxes, which, to carriages of this sort, are totally out of use, they being injurious to the axletrees, by cutting them at those parts they wear against, so as to occasion a frequent lining of the arms, now never necessary.

There are many sorts of axletrees and boxes invented various ways, with the following advantages, viz. for the purpose of containing a longer supply of grease or oil, to be more durable, to secure the wheels, and to lessen the draught. Those are all certainly great advantages, either of which, though the expence is great, their utility must be more than adequate to it, and merits more general notice. Some of those inventors even pretend, that all these advantages are combined in one axletree; but the generality extend to the advantage only of retaining a supply of oil, and remains perfect to a considerable length of time; but as it would not be just to give any partial decision on the superior merits of either, to the prejudice of others, the choice will be left to the readers of this subject to make their own selections, from the following observations on each,

assisted also with the representation in plate x, which may furnish a tolerable account of the whole.

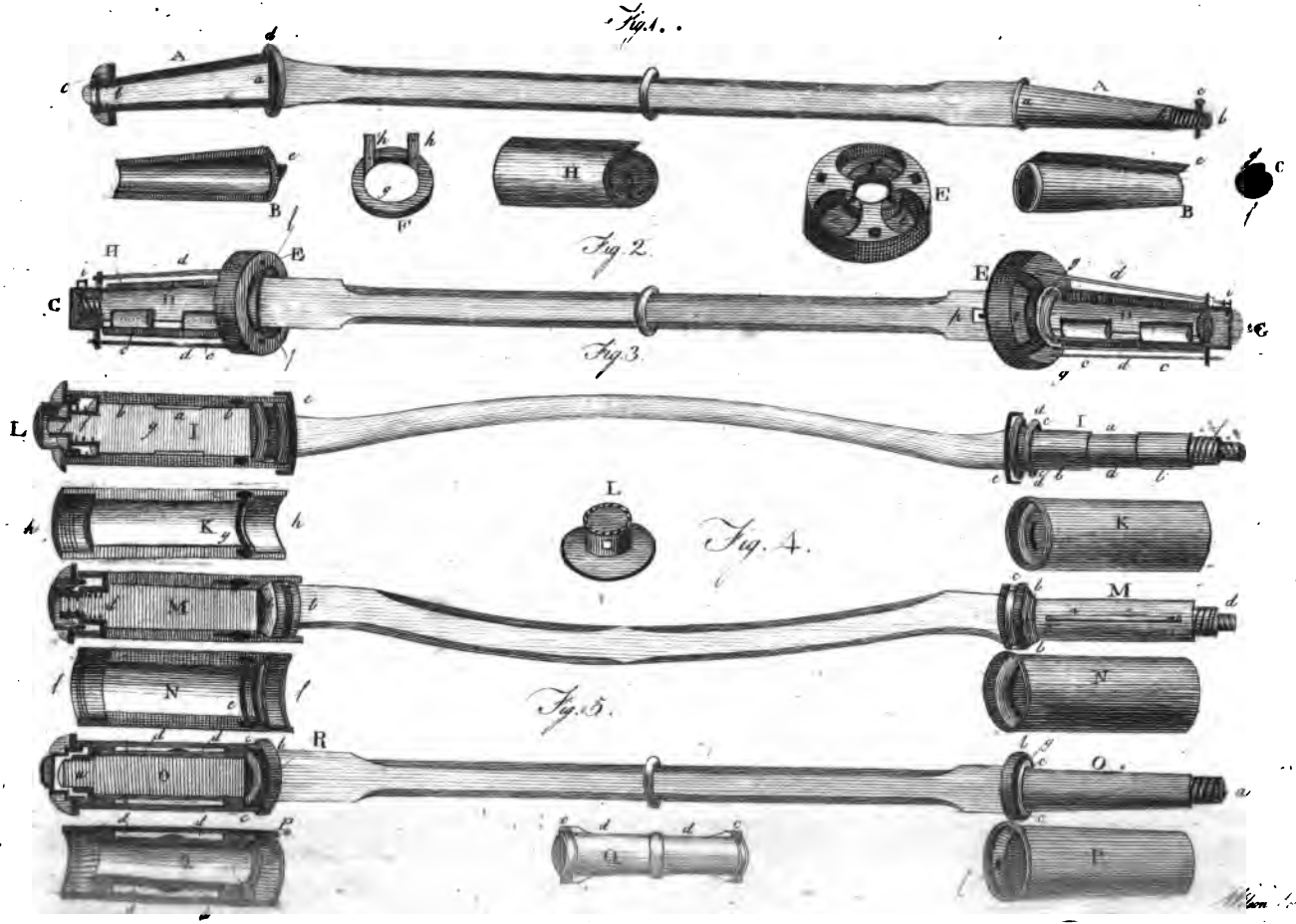
In order to give proper information concerning each figure of the different axletrees in the plate, they are represented with each end or arm in different views: the one end shews the axletree and box whole, and separate; the other shews the axletree with its box, nuts and caps, together represented, as though horizontally cut through the middle, for the purpose of shewing the insides thereof.

FIG. I. THE COMMON AXLETREE AND BOX.

Fig. 1. The common sort of axletree and box is most generally used, being simple and cheap in comparison with the others; the box is what only wears, and is frequently obliged to be refitted to the arms, otherwise they give to the wheel while in use an unsteady motion, and soon exhaust their supply of grease. Those, if well fitted, will contain their supply for about one week's regular use, or a journey of one hundred miles. They wear at the rate of one set of boxes to every two sets of wheels; and require in that time to be twice or thrice taken out of the wheels, and refitted to the axletree arms.

A, The

Plate X.



A, The arms of the axletree, which are made round, but rather of a conical form; strongest at the back or shoulders *a*; tapering to the lince end *b*, which is screwed for a nut, and also has a small hole for a lince pin *c*, which prevents the nut from coming off: at the body end is a collar or washer *d*, for the back of the wheel-stock to wear against.

B, The box whole and half shewn. This box is made of sheet iron, proportioned in substance to the weight or size of the axletree, having the shutting edges *e* welded in a ridge, which secures the box in the wheel.

C, The nut, which has a broad face *f*, to lie flat against the wheel, and is tapped or screwed to receive the screw end of the axletree; each of those nuts turn on the screw the same way the wheel goes, and have a notch *g* for the lince pin to pass through, for the purpose of securing the nut from turning off.

FIG. 2. THE PATENT ANTI-ATTRITION AXLETREE AND BOX.

Fig. 2. The advantages of this invention, of which the principal is in the axletree, are certainly very great, in reducing the draught of the carriage, and lessening the fatigue of the cattle; but owing to the independence of the proprietor,

to

to whom business is only a secondary concern, they have not been so industriously promoted and generally used as they should have been to the public advantage; but they now seem to be reviving with considerable improvements, which time and experience have given every opportunity for making; and the satisfaction so generally received from them is a sufficient proof of their advantage, which principally lies, first, in the great relief given to the draught, by more than one-third less than the common sort; 2dly, the retention of oil to supply a month's use; 3dly, the ease with which it is replenished without taking off the wheels; 4thly, the great security for the wheels, which it prevents from coming off, and the carriage from overturning, if even the arm of the axletree should break; and, 5thly, their durability, and even improvement by wear. Those axletrees, if made with the security for the wheels, need no nut or lince-pin, as is generally used; but the wheel may be taken off and put on as easily as those on the common principle.

D, The arm of the anti-attrition axletree represented whole at both ends, to give the different views of the reservoir, the strap-washer, and rollers, with the half box on each arm horizontally cut through the middle. Those axletrees at bottom are reduced from a perfect round,

round, and grooved to receive two rollers *c c*, on which the weight of the carriage is borne, and which greatly facilitates the motion, in the same manner as blocks of stone or timber, which require to be removed by the assistance of rollers. These rollers form the outer circumference of the axletrees at bottom, which are reduced to give a bearing only on them.

E, The reservoir or concealment for the oil, closely fitted and fixed by three bolts *d d d*, on the back of the wheel stock; the oil is here contained within three recesses *e e e*, and oozes through small channels on the arm of the axletree, which it feeds for a considerable time: it is made of cast metal, and has a cap *f* projecting behind, which prevents the dirt from getting in.

F, The wheel security, or strap washer; this has a collar *g*, which is placed within the wheel between the reservoir and stock, having to the collar lugs or straps *h h*, extending backwards some distance on the bedded part of the axletree, where it is fixed by a nut screw: by means of this strap washer, the wheel is secured to the bedded part of the axletree; and should the arm break, the wheel will continue to act, and, it can even be proved, has remained in use some weeks undiscovered.

G, The cap, which is also fixed on the front part of the wheel stocks by three bolts *d*; and by means

means of a screw plug *i*, the axletree and reservoir is replenished with oil.

H, The box, which is of the same form as the common box, only made of a very hard durable metal, of a considerable thickness, and is made in proportion to the weight of the carriage; shewing also how the axletree is supported on the rollers.

FIG. 3. THE PATENT CYLINDER AXLETREE AND BOX.

The superior advantages of those axletrees and boxes, which by the proprietor has been so industriously promoted to make them general, is very great over the common sort. They have been a considerable time in use, and their advantages have also been proved, which principally lie, first, in the length of time they wear; 2dly, the silent and steady motion they preserve to the wheels; 3dly, the advantage of retaining the oil to prosecute a journey of two thousand miles, without being once replenished; and, 4thly, they are very durable, and but little subject to be out of order.

Those axletrees and boxes have also gone through some considerable improvements since their origin, and have met with such encouragement, that it has induced other persons to copy them so nigh as scarcely to admit a decision in favour

favour of either, except that experience has proved in the one what can only be suggested in the other; but from every circumstance, they appear to possess the same advantages.

I, The axletree arm, made as perfectly cylindrical as possible, and of a peculiar hard surface; the middle *a* reduced, to contain the oil necessary to feed the axletrees at the two bearings *b b*, having a shoulder *c*, against which the wheel box takes its bearings; the adjoining collar *d* is grooved for a washer, to preserve the oil, and prevent noise in its use, with a rim *e* on the collar of the axletree, to answer the use of a cuttoo. The end *f* is double screwed, to receive two nuts for securing the wheel; the one screw turns the way of the wheel, the other the reverse, and is meant as an additional security.

K, The box whole, and horizontally cut through the middle, which is made of a very hard metal, nicely polished, and fitted to the arms; having a recess *g* at the back part, for containing there a supply of oil; having back and fore end projections *b b*; the back one fits close to the rim of the collar, which it covers; the fore one projects without the surface of the wheel stock, and is screwed on the inside, to receive the screw of the cap.

L, The cap, which covers the nut, and receives the waste of oil, is mostly made of brass, and

screwed on or in the box, and against the front of the wheel stock. This form of cap is used to all but the common axletree.

FIG. 4. THE NEW PATTERN CYLINDER AXLETREE AND BOX.

This new invention has some ingenious evasions of the Patent, but encroaches so much upon its principle as to make it unnecessary to bestow further observation on them; but where they are different, a sufficient description is given in the plate; and its references will convey as much information as is consistent with impartiality, having as yet received no proof to warrant any commendations.

M, The arms, made also as perfectly cylindrical as possible, of a hard surface, having a shallow flute or groove at *a* on the top, for the oil to be conveyed to the extremity of the axletree, which it continually supplies.

The collar or shoulder *b* is made conical for the wheel box to wear against, having a small groove also at *c*, for receiving a leather to prevent noise in use; a leather washer is also applied between the box and shoulder; it has also a double screwed end *d*, to receive the nuts, which

are

are also screwed on, reverse to each other: in the form of this screw there is also a little difference made, only as a deviation from the copy.

N, The box shewn as whole and horizontally cut through the middle. This box is also made of a very hard cast metal, nicely fitted and polished within. The recess for the oil at *e* is the same with the last, as also are its projections *f* for the same purpose exactly, except the back shoulder, which is bevelled, to fit the conical collar.

FIG. 5. THE NEW PATTERN AXLETREE WITH DOUBLE CASE BOX.

This new invention, the novelty of which lies in the box, is for the same purposes as the two last, to contain a supply of oil, and wear perfect for a greater length of time than the common axletree and box. This, in the construction, differs much from the rest, and to every appearance is no way inferior to them; but being a new introduction, the want of time to prove their sufficiency prevents any certain recommendation, further, than that from their appearance, they are likely to become general and useful articles.

O, The arms of this axletree is made to the same pattern as the common sort, but case

hardened, with a single screwed end *a*, having a brass collar *b*, with a deep groove *c*, to receive the projecting end of the outward case box which runs therein, and prevents dirt getting between the axletree and box.

P, The outer box or case, with the wearing box within, represented whole, and horizontally cut to shew the principle of it.

Q, The inner or wearing box shewn apart, previous to fixing it in its case. This box is made case hardened on the inside, and fits closely to the axletree arms; they are made shorter than the case or outer box, to admit the projection *b b* at each end for the same purpose as the last, having two collars or bearings *c c*, which fit close to the inner surface of the outer box, between which two bearings and boxes at *d d* the oil is contained, which oozes through two small holes *e*, at the back end of the box, on to the axletree arms.

These two boxes, after being made separate, are welded or brazed to each other; the oil is supplied at the back through a small hole *f*, which is plugged with a cork or screw.

R, The collar, made of brass, is fixed on the back part of the axletree arms, having a groove *g*, in which the back projection of the outer box is to run, for the purpose of preventing dirt from getting in.

Each

Each of those three last axletrees have peculiar wrenches to take off the nuts and caps with, which are always included in the price with them.

PRICE OF AXLETREES.

The value of common axletrees and boxes is necessary to be known apart from the carriage, as an alteration for those of the patent sort may shew the exact difference of expence, whereby the preference may be judged of with more certainty. The common axletrees are valued by their weight, which from each size to the other lessen about one-tenth—from the large coach to the small phaeton, in proportion to the former statements of carriages. The other sorts of axletrees are not so regularly reduced, but the prices are stated according to the fancy of the proprietor. The value of the boxes are included with those axletrees, but not with the common sort; when new boxes become necessary, the prices of them, and putting in the wheels, are stated separately.

FOUR-WHEEL CARRIAGES.

	Coach. £. s.	Chariot. £. s.	Phaeton, Large. £. s.	Phaeton, Middle. £. s. d.	Phaeton, Small. £. s.
Axletrees, per pair, - - - -	3 10	3 3	2 17	2 12 6	2 7
Boxes, per set, - - - -	1 16	1 12	1 10	1 8 0	1 6

TWO-WHEEL CARRIAGES.

	Curricle. £. s.	Gig. £. s. d.	Whikey. £. s.
Axletrees, each, - - - - - - - -	1 15	1 11 6	1 8
Boxes, per pair, - - - - - - - -	0 15	0 14 0	0 13

The patent and new pattern axletrees and boxes are reduced in their expence to three sizes only—the coach, chariot and phaeton; but in this the proprietors are not all regular in the allowance, some charging the same price for the axletrees and boxes of a phaeton as others do for those of a chariot: they however all allow the single axletree, for curricle, gig or whiskey, to be regularly half the price of the cheapest pair. The statement is nearly as follows:

	Coach. £. s.	Chariot. £. s.	Phaeton. £. s.	Single for Gig. £. s.
Patent anti-attrition axletree, per pair, - - -	21 0	20 0	19 0	9 10
Patent cylinder, - - ditto, - - -	27 16	26 5	26 5	13 2
New pattern, - - ditto, - - -	23 0	22 10	22 0	11 0
New pattern, with double box, ditto, - - -	26 10	26 10	24 10	12 4

By this statement, the value of any change of axletrees to a new carriage is known. The alterations to old carriages for any pattern, must have the expence of taking out and putting in added.

SECT. 3.

CRANES.

Cranes are the strong iron bars, to which are united the hind and fore part of a carriage on each side. They are made of a crooked form, resembling, at the fore part, that of a crane's neck, for the purpose of admitting the fore wheels to pass under unobstructed, whereby ground is saved in turning, which gives to carriages made with them a great advantage, as they can be used with more freedom in narrow confined places, and have also a great superiority in the appearance, in any handsome carriage. They require to be manufactured of the best materials and workmanship, as they support, like the perch, all the weight of the body: they are different in their forms, which makes also a difference in their price, and which has before been stated under the head of Crane-neck Carriages in page 84, which makes it quite unnecessary to give any further account of them than what is represented in Plate ix. Fig. 12, 13, and 14.

Fig. 12. The double bow crane, having the hind part shaped in imitation of the fore part, which fills up the vacant space behind, and forms a more agreeable line to the shape of the body.

Fig.

Fig. 13. The half-bowed crane, bent on the hind part, to imitate the double bow, which bend extends to a bearing on the axletree bed.

Fig. 14. The common crane, having only the necessary bend for the wheel to lock under, from which bend it continues almost straight to the hind end.

SECT. 4.

STAYS.

Stays are iron bars, variously formed, and of different descriptions, bearing name from the essential part which they are meant to support: some of their bearings are by collars, and then are called collar stays, also when a collar is wrought in the middle of a bar for ornament. Their use is very great to confine or support any two separate parts of the carriage, which is done by being wrought with collars, shoulders, clips, or spurs, and are confined by bolts to their situations: there are many of these stays which are called irons, being less necessary to support, but as essential in their use, and take their name from the parts to which they are applied; of which some are lightly fixed, and others are only frames for leather coverings, &c.

Those

Those being articles of iron-work which form a part of the carriage, are included in their value; all that is necessary is to represent them in the plate, and explain their use. When any of them require to be repaired, or replaced through failure, the prices will be found under the general article of Repairs.

The spring stays are all represented in Plate ix. with the springs, shewing how they are supported at the hoop, and likewise the manner of fixing the stays to the opposite resting bar, with clips, flaps, or cups.

PLATE XI

A, The bottom or main stay of a curricle or one horse chaise; it supports the shafts from the axletree, to which it is also confined, is fixed on the bottom of the shafts, and unites the bars by means of lugs or clips crossing the joint.

B, The horn-bar stay, which, bolted at the middle on the bottom of the perch, is carried up to the end, and fixes to the horn-bar, which it strengthens, to support the pressure of the spring stays.

C, The coach-box stays: the straight one is the back or standard stay; the crooked one, the compass or foot-board stay which supports the foot-board; the other prevents the coach-box

from coming forward, by being bolted to the horn or budget bar.

D, The hind standard stays, are the ornamental guards fixed on the hind part of the carriage; the back and front ones are sometimes both of one shape; their use is to support the standards, and form a part of the ornament.

E, The seat iron, by which the coachman's seat is supported and fixed by means of a cradle, which ties or buckles on to the loops at the ends; they are fixed in the standard at the top, and are hooped and bolted thereto.

F, A luggage iron; the frame of a luggage or salloon boot, and round which the side leather is secured: after being bolted on to the bottom or platform, those irons form the side of the boot.

G, The dashing iron; a frame for a gig or curricle, which is covered with leather for the purpose of avoiding the splashing in travelling; it is bolted through the fore bar, and is generally supported from the back by two stays, having loops for the purpose of help to mount by.

H, The wheel irons, of different shapes, the straight and compassed. The compass wheel irons are for the purpose of forming a step or tread for the coachman to mount on; their use is to stay the splinter bar where the draught is taken from, and to which it hooks on at the socket

socket eye, and fixes on to the axletree end against the wheel, where it is secured by the axletree nut.

I, The wing iron, or frame for the wings of a chaise, which is covered with leather, and fixes on the elbow rails.

K, A head frame, to which the head of a chaise is fixed, when intended to be taken off occasionally.

SECT. 5.

PLATES.

Plates are material articles of the iron-work, they add to the strength and preservation of the timbers; in particular where they are curved, or where any two parts wear against each other.

L, The perch side plate, of which there are two to a perch, are fixed on to the sides of the timber, to which they are secured by rivets: they admit the timber to be reduced, which gives a much lighter appearance to the carriage, and prevents it from settling by the weight of the body, as the other perches will do.

M, A bottom plate, which is bolted flatways to the bottom of the perch, to assist the timber

in its strength; those are not used with side plates, but in a short length called a wearing plate, which is fixed on the bottom of every perch for the sway bar to wear upon.

N, The transom plates, of which there are two, made flush to the top of the fore axletree bed, and to the bottom of the fore transom, to strengthen and preserve the timbers from wearing by the friction they are necessarily subjected to in turning of the fore carriage.

O, The half-wheel plate, which is a flat semicircle plate, horizontally placed, and united with the fore transom plate, and is cased on the circular part with a wood moulding; its use is to maintain a steady bearing to the locking of the fore carriage.

P, A whole-wheel plate; a circular plate, horizontally placed between the fore bed and transom; it is sufficient in its bearings without a top transom plate, as it preserves an equal bearing on any lock of the fore carriage; a small bearing plate is necessary on the centre of each bed. Those wheel plates are always used to crane-necks, and frequently to the better sort of perch carriages; they are cased on the top like the half-wheel plates, with a wood moulding.

Q, The sway-bar plate, sometimes used to strengthen the sway-bar, and preserve it from wearing

wearing by its friction against the wearing plate of the perch.

R, The nose plate, which is a short plate bolted and clipped at the bottom of the futchels to keep them stiff for the pole, and which rests also on it.

S, The standard plates, are bolted on the back and front of the coach-box standards at the bottom, and clip and bolt to the transom; by means of these plates the coach-box is fixed: the plates sometimes extend up to the bottom of the stays, to strengthen them.

T, The cross-key plate, is bolted to the top of the futchels, and preserves their strength against the stress of the pole, which it supports at the back end.

U, The boot door plate, a broad three side plate, which is screwed over the edges of the door.

V, The futchel plates, are thin square plates sunk in a level with the chaps of the futchels, to preserve the hole from wearing by the pole-pin.

W, The pump or guard handle plate, which is screwed on the bottom of the timber to strengthen it.

X, The short block plate, for the same purpose as above.

Y, A corner plate, used to unite and strengthen the joints of any framing.

SECT.

SECT. 6.

SOCKETS OR CAPS

Are iron furils, fixed on the ends of the timbers, either for strength or for instruments to draw by.

Z, The shaft sockets, which are wrought in the solid plate of the curricle sides: when shafts are occasionally used for one horse, they are placed in those sockets, and confined by a screw.

a, A splinter-bar socket, with an eye wrought from the solid in which the wheel iron is hooked.

b, The small splinter sockets, shewing the hook, the eye, and dragon's tongue, which are for one and the same use, to fix the traces to, for the purpose of drawing by.

c, The pole cap or ring, which is a ring socket fixed to the extreme end of the pole, with loops for the pole pieces, which are placed therein.

SECT. 7.

HOOPS AND CLIPS

Are used to unite two separate articles to strengthen each other; the hoops confine them by being

being forcibly drove on, and the clips by bolting; they are made of tough thin iron, and formed to the shape of what they are designed to unite.

d, A perch hoop, which unites the wings to the perch, by being tightly drove on them.

e, An axletree hoop, which is forcibly drove on the axletree and bed, to confine them together at the shoulders.

f, A clip which is placed over the axletree, and secures it in the bed to which it is bolted, and for other purposes.

g, A clip which secures the shafts of a one-horse chaise to the fore bar, through which it is bolted.

SECT. 8.

BOLTS, NUTS AND SCREWS.

Those are the principal instruments by which the timbers and iron-work are confined to each other: they are made of various lengths and sizes, but mostly of half an inch diameter, and of different formed heads, fastened by a screw or nut at the bottom; which nuts are proportioned to the size of the bolts, and are of a square form in general, to be screwed on by a wrench; some are made for temporary purposes, to be screwed on with

with the finger and thumb, and are called thumb-nuts; sometimes a screw with a strong thread, and a head made like a nut, supplies the place of a bolt, and is called a nut-headed screw.

h, A perch bolt or pin, a strong iron pin which goes through the centre of the fore axle-tree bed and fore tronsom, and is what the fore or under carriage is secured by to the upper one, and by which bolt the carriage turns and is drawn; a small key or pin goes through the bottom, or is otherwise secured by a screwed nut.

i, The common bolt, which receives a screwed nut at the bottom.

j, The common nut, which screws on to the bolt.

k, A collar-bolt, having a shoulder or collar in the middle with double screwed ends, and serves to fix one thing upon another, either of which may be separately taken away without displacing the other.

l, A strap-bolt with a thumb-nut, having a flat part with holes, by which the bolt is fixed to the side or top surface of any timber, and is mostly used to secure the door or lid of boots.

m, A pole-pin, a round iron pin with a flat head, by which the pole is kept in its place.

n, A

n, A splinter-bar roll, or roller-bolt, a long bolt with a large round flattish head, made square at the upper part, which is fixed through a roll of three inches depth and two diameter; leaving the bolt of a length to fix through the splinter-bar and futchel, or splinter-bar end only; its use is to receive the traces by which a carriage is drawn.

o, A tee-headed bolt, with a thumb-nut; it is a bolt made in the form of a T, to fasten the ends of a short brace between two articles, which it properly separates, by contracting the brace in the middle by means of a thumb-nut screwed at the bottom, and is mostly used to the bar or loop of a curricle or chaise to hang the splinter by.

p, The bolt hook and eye, are two bolts having from their shoulders projections, one of which is wrought in a hook, the other in an eye, to receive it; they are bolted to separate things which occasionally hang together by means hereof, and mostly used to the shafts of a one-horse light phaeton.

q, A nut-headed screw, a screw of the same substance as a bolt, having a large strong thread, and a thick square head in the form of a nut; they are of various lengths and sizes, and their use is to fix any two strong articles together where the hold is in the wood.

r, A trunk-fastener, is a strong screw, with a collar and square head, used for the purpose of keeping a trunk steady on the platform.

SECT. 9.

RINGS, STAPLES, LOOPS, AND SHACKLES.

These are instruments by which other things hang or are confined: their form and substance vary very much from each other, according to the separate purposes for which they are intended.

s s s, The body loops, made to various patterns, to fix at the bottom corners of the body, by which it hangs from the spring: they are made of a strong substance, and fixed with nut head-screws; and are wrought with a square loop to receive the main brace.

t, A body loop for a gig, which hangs from the pillar through which it is bolted, having a spur or stay without, and a strong stay within, to preserve the pillar.

u, A shackle, which bolts on to the top of the springs, from which it hangs, and receives the brace from the body loop.

v, The

v, The body loop, stay, and spring, united, for a step-piece body.

w, A double and single collar-brace ring; the double ring is made with a square loop at each end, to receive the collar-braces, and is fixed on the top of the perch; the single ring is made with one loop, and fixes to the bottom of the body.

x, A check-brace ring, a ring made with a strong screw, to fix in the middle of the corner pillar, for the check-braces to loop through.

y, A pole-staple, a large iron staple drove into the top of the pole at the back part, and which receives the gib to keep the pole tight.

z, A breechen-staple, a staple which screws in the shafts: its use is to receive a breechen-strap of a one-horse harness, to which it is buckled.

1, A shaft-hook and a shaft-tug, which are meant for one purpose, to receive the bearing-tugs of a one-horse harness.

2, A pole-hook, a strong long hook, fixed on the end of a pole, by means of two bolts in a plate: its use is to hang the middle splinter-bar to, when four horses are used.

3, A lug-hook, which is a plate turned at the top, having holes on the sides to screw it to the side or end of a trunk, by which it hangs.

SECT. 10.

JOINTS AND PROPS.

By joints is to be understood the iron-work by which the heads of chaises, landaus, phaetons, &c. are fixed up or let down; and the props are what the ends of those joints are fixed upon and supported by.

4, A joint for a landau head, which is fixed on two props only.

5, The joint for a chaise or phaeton head, which is obliged to be double, and fixed on three props.

6, The bottom, top, and middle props, for the joints to be placed on, and which is screwed by a nut: the bottom prop sustains the main purchase, and is the strongest.

7, The neck-plates, which are separate thin plates, to screw on each of the slats; they are placed on a bolt, on which the head acts.

SECT. II.

STEPS.

The steps in this representation are only those of necessity, and which are included in the value of the carriage already mentioned. The double and treble steps, requiring more than the iron-work to make them complete articles, are hereafter treated on, and their separate value affixed.

8, A footman's step, having a back stay thereto, by which it is much assisted in its strength.

9, Single steps to a one-horse chaise carriage, &c. having also the stays, shewing the two principal forms they are made in.

Many of those articles of iron-work are unconnected with those bodies and carriages already stated; but they compose a part of the additional and following requisites, in which their value is also included, such as the boots, coach-boxes, &c.; but they have been here represented, to make the knowledge of them more correct.

CHAP.

CHAP. VI.

WHEELS.

Upon the superior advantage given to the motion by the different heights of the wheels, opinions are frequently divided; some maintaining the large, others the smaller wheel. On smooth ground the smaller wheel moves quicker than the large; but on a rough or uneven surface, the large wheel has the preference, as it will easily overcome the resistance which obstructs the small one.

Wheels should be made, to four-wheel carriages, as near of a height as the construction and appearance will admit; and if not required for heavy work, the lighter they are made the better. The fixtures, from whence the draught is taken, should be placed rather above the centre of the largest wheel, for advantage of draught.

The members of a wheel are of three descriptions, viz. the nave, the spokes, and the fellies. The nave is the stock, made of elm, in which all the spokes are fixed, and in which the axletree or wheel-box is confined, to receive the axle-arms. The spokes are straight timbers, made of

of oak, firmly tenoned in the nave, and are the support of the fellies or wheel-rim. The fellies, made of ash or beech, are the rim of the wheel, divided in short lengths, in the proportion of one to every two spokes: those are fixed on the spokes; and on them the iron or strakes, which maintain the wear, is nailed.

The height of the wheels regulate the number of spokes and fellies that to contain; as the larger the circumference of the wheel is, the number of spokes required is greater in proportion; they should not be to any wheel more than fifteen inches distant on the fellies.

The usual height of wheels extends to five feet eight inches, and are divided in four proportions, to contain from eight to fourteen spokes, and only half that number of fellies; and are reckoned eights, tens, twelves, or fourteens, which are the number of spokes in a wheel, or fellies in a pair. The height which regulates the number is, for an eight-spoke wheel, not to exceed three feet two inches; for a ten, four feet six inches; for a twelve, five feet four inches; for a fourteen, five feet eight inches. These are the extreme heights for the different numbers of spokes to each wheel, which should be rather more than less, in particular to the fore wheel of a four-wheel carriage, which receives more stress than the hind one; and the rule is, when the hind wheels are of that

height

height to require fourteen spokes, the fore one, if under the necessary height before stated, should have twelve; never allowing the fore wheels to have but two spokes less than what is needful for the hind ones.

There are three descriptions of wheels, viz. the strake, the hooped, and the patent rim: the difference of either is only in the rim; so that in wheels there are four heights, and three sorts, which makes twelve different prices in the whole.

PLATE XI.

Fig. 1, 2, 3, and 4, are wheels of four different heights, shewing the number of spokes each wheel ought to contain, and the difference of the three sorts.

Fig. 1, A hooped wheel, called an eight, made with fellies, and hooped on the rim.

Fig. 2, A straked wheel, called a ten, made on the common principle, with fellies, and the iron rims in short lengths or strakes.

Fig. 3, A hooped wheel, called a twelve, with fellies and a hooped rim.

Fig. 4, A patent wheel, called a fourteen; this is the patent rim, shewing the nuts of the bolts with which the rim is fastened.

Fig.

Plate XI.

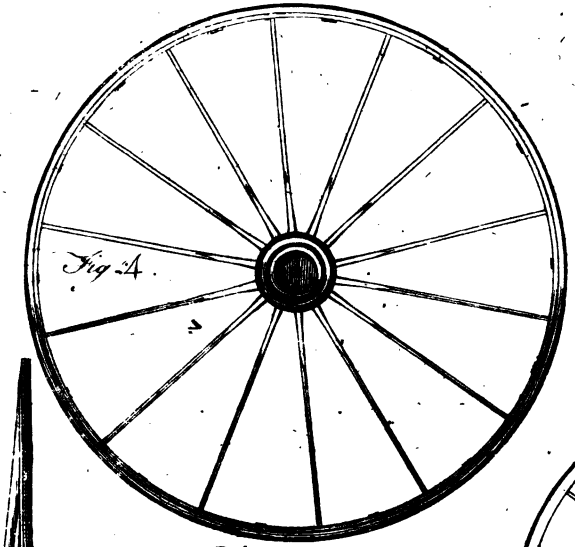


Fig. 4.

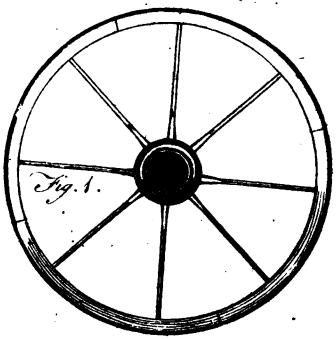


Fig. 1.

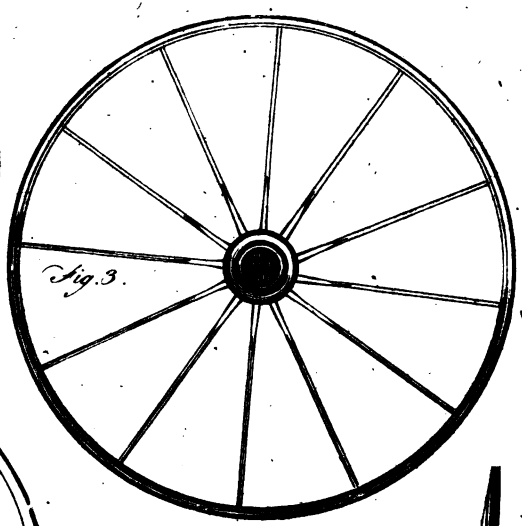


Fig. 3.

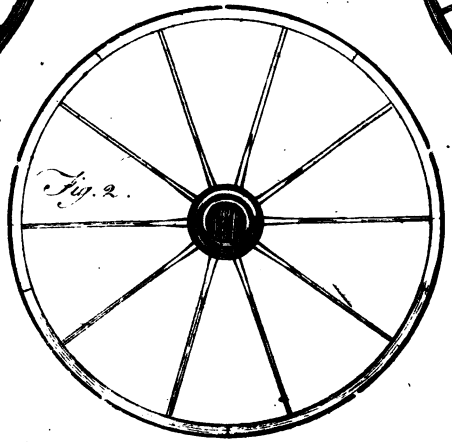


Fig. 2.

Fig. 9.

Fig. 7.

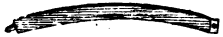


Fig. 6.

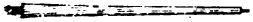


Fig. 5.

Fig. 8.

Fig. 10.

H. Wilson &c.

Fig. 5, The nave or stock, which is the centre of the wheel, in which the spokes are fixed.

Fig. 6, A spoke, which fixes in the stock, and supports the rim.

Fig. 7, A felly, with the dowels on the end, by which it is fastened at the joints.

Fig. 8, A side view of a strake wheel.

Fig. 9, A side view of rimmed hoop wheels.

Fig. 10, A strake, which is the short iron with which the common wheel is rung.

The superiority of the patent wheels to the common sort, consists in their neat light appearance, and in the length of time they wear, as two sets of the former will wear as long as three of the latter. The mock patent wheels come very near them in appearance and use, particularly if made with ash fellies; as the preservation of both lies principally in the hoops that the wheels are rimmed with.

Many persons prefer the common sort of wheels, on account of their being more easily repaired than the hoop wheel, which is certainly right; but though the repairing the latter is more difficult, they are much less subject to need it.

PRICE OF WHEELS PER PAIR.

When the fellies of wheels are moulded, which they sometimes are, an additional charge must be made. In general, the various heights of wheels regulate the extra charge; but when required to be made heavier for a coach, or lighter for a phaeton or chaise, a proportionate addition or reduction in the price must follow.

	Eights. £. s.	Tens. £. s.	Twelves. £. s.	Fourteens £. s.
Strake rims, - -	2 5	2 15	3 10	4 0
Hooped rims, - -	2 15	3 10	4 0	4 10
Patent rims, - -	3 10	4 10	5 0	5 10
Moulded fellies, -	0 7	0 8	0 9	0 10
Difference of heavy and light wheels, - -	0 4	0 6	0 8	0 10

SECT. 2.

BOOTS OR BUDGETS.

Boots and Budgets are mostly understood as one article, though so differently called: they are all intended for one purpose, which is that of carrying luggage, and are mostly fixed on the fore

fore part of the carriage, between the springs: that wherein the principal difference lies, is what is made with a loose cover, and is properly the budget, being made convenient for trunks; those budgets, for travelling carriages, or common post chaises, are by far the most convenient; the others are boots, of a trunk form, made more square, and are mostly used for town carriages, but can be of no other advantage than that of carrying loose hay, or coachmen's conveniences. From one or other of those boots, conveniences are sometimes made for the substitute of a coach-box, to save labour to the horse when the carriage is used for post-work, or to preserve the view from within uninterrupted by a coach-box and hammer-cloth.

Boots are frequently used at the fore end of phaetons, and mostly have the fore springs fixed thereto by means of carved blocks, which are bolted to their sides, and usually have the step for the entrance to the body fixed or hung thereon. Boots and budgets are frequently used to the hind parts of phaetons, gigs, or curricles, and are of two sizes less than what are used to coaches or chariots, which are so near in form as to make the description given in the Plate sufficient for the general purpose.

PLATE XIII.

Fig. 1, and 4, Common square japanned boots, which are mostly made of thick elm, and covered with strong russet leather, welted round the sides, opens in the front by means of a door, which has an iron-plate screwed round the edges for it to shut against, and is fastened by means of a bolt and thumb-nut, or private locks.

Fig. 2, A platform or luggage boot, made as represented in Plate vii, with iron-frame sides, which are here represented covered with a stout black-dressed leather, over which the case or cover, made of the same materials, is placed, and buckles to the sides, back, and front; the borders of which should be welted to the top-piece, as they fit much better than when made in one piece of leather. Within those budgets are straps fixed to the bottom, which are to confine whatever is placed in them, which otherwise would be injured by the motion of the carriage.

Fig. 3, A boot made with a convenience for the coachman to sit and drive upon; this requires to be made of much greater strength than the others, owing to the weight of the man, and should be hung upon springs, as represented; which springs also carry the body. The boot should be framed of strong ash, and boarded for the

the leather; half the top throws up to a perpendicular position by means of two irons of a semicircular figure, which run in a groove or staple fixed to the framing, and are confined, when up, by a thumb-screw on each side; on the inside of the top is made the seat, which takes up but little room in the boot when down; the front lets quite down, but is stayed, to answer the use of a footboard, by means of two hinged flat stays fixed by the same screw as the irons are; it is fastened when down by the bolt on the front passing through a plate on the top, and secured by a thumb-nut; those are readily placed, and should have a door to open behind if the seat is to be made fixed.

Fig. 4, A phaeton boot, made similar to Fig. 1, but not of so square a form, but is obliged to be made rather stronger, on account of receiving the weight of the fore part of the body, which is fixed to the springs that are bolted on blocks to the sides; this has always a step on the sides, from which, sometimes, other steps are to hang; they sometimes open at the top, and sometimes at the back or fore ends.—For the Salisbury boot, see Coach-boxes.

Coach, chariot, and large phaeton boots or budgets, vary so little in their size, as to make the difference in value not worth notice: the sizes

beneath

beneath those are two, and are used to gigs, curricles, middle and small sized phaetons; so that on the whole they may be considered as of three proportions, which usually are as follow:

	Long.	Wide.	High.
Large size,	3 ft. 0 in.	2 ft. 3 in.	1 ft. 6 in.
Middle size,	2 ft. 3 in.	1 ft. 8 in.	1 ft. 3 in.
Small size,	1 ft. 6 in.	1 ft. 2 in.	1 ft. 0 in.

PRICE OF BOOTS AND BUDGETS.

	Large. £.	s.	Middle. £.	s.	Small. £.	s.
A platform or luggage-budget, as Fig. 3, - -	8	0	6	0	4	0
A trunk boot, as Fig. 1 and 4, - - -	5	0	3	10	2	10
A framed trunk boot, to open with a seat for the coachman, as Fig. 3, - -	10	0	9	0	8	0
A framed ditto, for a coach-box to be placed on, -	6	0	4	6	3	3

Those are supposed to be all made on one and the same principle, only reduced in their sizes, and the statement will answer to every kind of carriage; and any that come within or between those sizes may easily be ascertained hereby: but if any of the platform budgets are made with wood sides, instead of iron frames covered with leather, as the small boots frequently are, then one fourth may be deducted from their value.

CHAP.

CHAP. VII

PLATFORMS, OR RAISED HIND OR FORE-ENDS AND BLOCKS.

Those platforms, raisers or blocks, are added to a carriage either as matter of necessity or appearance, but mostly for appearance, which they materially add to in those parts to which they are applied, being generally ornamented with carving in different degrees; their use is to elevate and support the budget, boot, hind foot-boards and springs; they are generally placed on the side, and relieve the inside framings from being obscured by the platforms, as they are lightened and moulded, and give to the carriage a more airy appearance: being of various designs, they are omitted from the charge of the naked carriage, as formerly stated, so that any description may be added according to fancy.

SECT. I.

RAISED HIND ENDS, PUMP HANDLES, AND SHORT BLOCKS—FIG. 8, 9, 10, 11, 15.

Those different sorts of hind ends are for one and the same use, viz. for relieving the platform or foot-board from the hind framings to whatever height is necessary: the difference is, that the pump, plow or guard handle, (Fig. 9 and 11), are made to extend further from the spring bed, in the form of one of those handles mentioned, which, assisted in its strength by an iron-plate at bottom, serve for the servant to help himself up by, and to keep the horses of other carriages from coming too near to do injury to it. The short blocks (Fig. 8 and 10) are what are used to post-chaise carriages, or when a platform, called hind standards, is to be added; they do not extend further from the hind spring bed than what serves to ornament them.—The phaeton and chaise blocks (Fig. 15) are of various forms. If the hind end is narrow, with two bars only, they are made like the short blocks; but if wide, for long spring blocks, they extend to the furthest bar to fill up the great space, and form a large platform for a trunk, &c. to be placed on occasionally.

SECT.

Plate XIII.

Fig. 2.

Fig. 3.

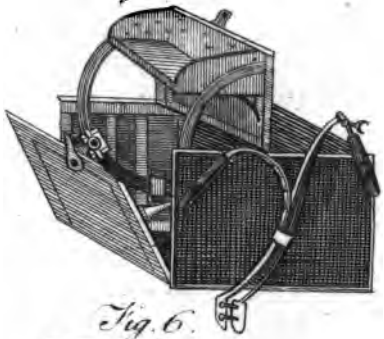


Fig. 1.

Fig. 5.

Fig. 7.

Fig. 6.

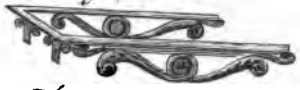


Fig. 13.

Fig. 12.

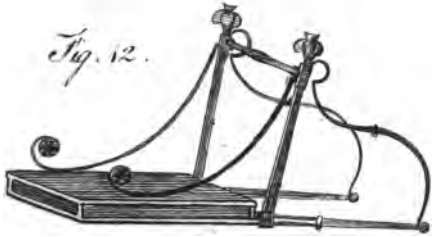


Fig. 4.

Fig. 14.

Fig. 11.

Fig. 8.

Fig. 9.

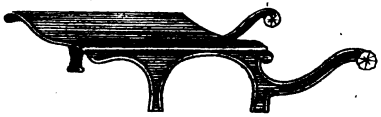


Fig. 10.

SECT. 2.

RAISED FORE ENDS OR FORE BLOCKS.

FIG. 5, 6, 7.

Those fore blocks are the same to the fore ends, as the hind blocks are to the hind, to raise the budget or boot, and relieve the framings, in order to assist the appearance of the fore part of the carriage: those mostly have their bearings across the framings between the springs; there is a fore bar, on which one of the bearings is fixed, that is frequently called a block, but can only be considered a block when ornamented to answer the sides; it bears a proportion in value of about one-fourth of the other two; so that when omitted, it may be deducted from the amount given, which includes it.

SECT. 3.

SPRING BLOCKS.

FIG. 13, 14.

Spring blocks are of two sorts, which materially differ from each other; the one is to raise the hind springs, the other the fore ones; and like the

others are more or less ornamented; but those represented are of the largest and superior kind, from which they may be reduced to any simplicity. Long blocks or platforms are frequently fixed between them when a hind budget is not used, for the purpose of filling up the large vacancy across the bars.

SECT. 4.

CUSHIONS AND STANDARDS.

FIG. 11, 12.

Footman cushions were intended to make the situation of the servant more comfortable, but are now seldom made otherwise than in the form of a cushion, with boards only, covered with leather, without any sort of stuffing, to make them more easy than a common foot-board: their chief use is to raise the footman, and to ornament the carriage, particularly when standards and wings are added to them, which are also assisted in their ornament and strength with the irons that support them. The carving introduced in those standards is also a great addition to their appearance;

ance; and they are at present the principal ornaments to the hind part of a carriage. Their advantage, besides ornament, is to prevent other carriages coming behind from injuring the servant or pannels.

PRICE OF RAISED, HIND AND FORE ENDS, BLOCKS, STANDARDS, AND CUSHIONS.

Those articles are the same in value to either coach or chariot *carriage*, for which they are principally used. The difference in their price arises from the manner in which they are ornamented; and to state them finished in three different ways, as is represented in the Plate, will furnish sufficient information of the general variety now in use.

	Plain Moulds. £. s. d.	A little Ornamented. £. s. d.	Much Ornamented. £. s. d.
Fig. 9 and 11. A pair of pump, plow or guard-handle blocks and footboard,	2 0 0	3 0 0	4 0 0
Fig. 8 and 10. A pair of short blocks and foot-board,	1 10 0	2 5 0	3 0 0
Fig. 5, 6 and 7. A pair of raised fore-end or budget-blocks,	1 10 0	2 10 0	3 10 0
	Plain.	Plated round the Top.	Plated Top, Bottom and Corners.
Fig. 11. A footman-cushion only,	2 2 0	2 18 0	3 16 0
Fig. 12. A footman-cushion with hind standard,	6 0 0	6 18 0	7 18 0
	Large.	Middle.	Small.
Fig. 13. A pair of hind spring blocks for a phaeton,	4 4 0	3 3 0	2 2 0
Fig. 15. A platform for ditto raised with blocks,	1 10 0	1 5 0	1 0 0
Fig. 14. A pair of fore-spring-blocks only,	1 0 0	0 15 0	0 10 0

With those articles, the expence of putting them on, and the materials used therefor, are included in the above statements.

CHAP. VIII.

COACH-BOXES.

A handsome coach-box is the greatest ornament to a carriage. Of these there are various sorts now introduced, as matters of convenience. To save unnecessary burden to the horse, and fatigue to the driver, are two very material objects to be attended to.—The objection by many persons to a coach-box, is the obstruction it gives to view; but they may be so adapted as not materially to affect the sight from the front windows; and any convenience, however simple, is by far better than fatiguing both man and horse; but to carriages used in town, a substantial coach-box is indispensably necessary, as it affords so material an advantage to the driver; nor is the view from the front so great a matter of concern as if intended for country use.

SECT. I.

FIG. I. STANDARD COACH-BOX.

This coach-box is the most general and simple in use, as it is light, and convenient to remove on

on any occasion: it is mostly preferred for those carriages that are alternately used for town and country; they are simply fixed by means of plates, which clip the transom, and are stayed on the hind or boot bar with a collar-bolt.

SECT. 2.

FIG. 2. THE SALISBURY COACH-BOX.

The Salisbury boot, though of a bulky and heavy appearance, is by far the most convenient and fashionable coach-box in use; it is boot and coach-box together; and although it be apparently heavy, it is not more so than another separate coach-box and boot, if weighed together, as it has a large cavity within which is peculiarly convenient to convey parcels, or to contain the coachman's requisites, having a large flat bottom, which, resting on the framings or blocks, makes it move more steady than other coach-boxes on the common principle. This sort, however, is the most inconvenient to remove, and requires, when taken off, to have the vacant space filled by another kind of budget.

Fig. 1.

Fig. 6.

Fig. 3.

Fig. 5.

Fig. 2.

Fig. 4.

SECT. 3.

FIG. 3. AND 6. IRON COACH-BOXES.

The iron coach-boxes are of the most agreeable design, of a very light appearance, but are more heavy than the others. They are made to fix on the top sides of a budget, or are supported on rich ornamented blocks: they can easily be taken off from the boot; but from the blocks it is never necessary, being only used to handsome town carriages. Their form differs agreeable to the fancy of the builder; but are mostly of either of those designs that are represented; the one shewing the foot-board, and brackets or ledges on, and the other without them, and shewing the method of putting them on.

SECT. 4.

FIG. 4. TRAVELLING COACH-BOXES.

The difference of this coach-box lies in the seat only for travelling carriages, which may be made to any of the three last-described coach-boxes, but is mostly used to the one represented: it is made with iron frames at the ends, covered and lined with leather all round, with a cushion of the same,

same, and has leather-falls, which answer the purpose of a hammer-cloth : it is fixed on to the top iron-work with bolts, having a cradle, the same as the others, for the seat ; they sometimes hang upon springs, and are made with a head and knee-flap the same as to a one-horse chaise ; their use is to make the situation of the servant more comfortable, and more secure from danger, by travelling on bad roads ; they can be made so as to take off occasionally, and have the usual seat and hammer-cloth put on.

SECT. 5.

FIG. 5. THE CHAISE COACH-BOX.

This is an imitation of a chaise body, which is occasionally placed on the boot, and made of a size for one or two persons to sit therein, frequently intended for the proprietor's own pleasure to drive in, or to give more freedom to view from the front windows. They should always be lined with leather, and hung so as to be easy to ride in ; a pair of springs should be fixed to the front part, and looped on to prepared iron-work fixed to the boot ; the hind parts should be supported from the springs which carry the body by means of a bar which cross them, having the loop of the coach-

coach-box compassing this bar, and hanging thereon with a short brace. This kind of a coach-box may be made to fix on a one-horse chaise carriage, and serve both purposes; but if for this purpose only, they are made as simple as possible.

SECT. 6.

COACH-BOX CRADLES AND SEATS.

Coach-boxes are not complete without those articles; but as on some occasions they may be separately wanted, the separate statements will therefore be necessary, and their value may be added to the coach-box.

A cradle is a leather platform, made to receive the seat: it is fastened to the loops on the seat-irons, and is either buckled or tied thereon, so as to let loose or tighten at pleasure. By those cradles the seating for the coachman is made comfortable, and is generally adapted to their several conceits.

A seat is a long-formed cushion of various sizes, but, agreeable to the present fancy, is mostly made two feet three or four inches, by three feet ten inches, or four feet long. It is made with strong materials, stuffed with straw,

and covered over with a cloth or baise, lined at the bottom with strong leather, called a galling-leather, which preserves it from wear by rubbing on the seat-irons, on which it is placed, and is fixed on the cradles by straps which pass through it towards the ends, which straps are fastened to the fore standards. Sometimes those seats are fastened to the seat-irons with straps and buckles; the seat-irons then extend to the width of the seat, which has two square holes in each end for the straps to go through: this method gives more length to the cradle, and ease to the seat, which sinks in the middle by the coachman's weight.

PRICE OF COACH-BOXES.

	£.	s.	d.
A common coach-box, as Fig. 1. - -	3	15	0
A Salisbury ditto, as Fig. 2. - -	8	15	0
An iron ditto, as Fig. 3. and 6. -	8	10	0
A budget for ditto, - - - -	5	5	0
Carved blocks for ditto, as Fig. 6. - -	8	8	0
A chaise-box without the boot, Fig. 5, -	10	0	0
A Coach-box budget, as Plate xii. Fig. 3, the springs excepted, - - - - -	10	0	0

SEATS AND CRADLES.

A common cushion seat, - - -	0	18	0
A cradle and straps for ditto, - - -	0	12	0
A travelling coach-box seat fixed on the seat-irons, Fig. 4, - - - - - -	3	13	6
A ditto with springs, - - - -	7	7	0

SECT.

CHAP. IX.

TRIMMINGS.

The trimmings about a carriage, with which the cloth is ornamented, have, within these few years, been much improved, both in quality and quantity. Therefore, to ascertain the value of linings or hammer-cloths with any accuracy, it is necessary to represent the various sorts of trimmings in use. That which is most generally used is made of worsted, with narrow silk stripes or lays, and is two inches and a half in width; from that it extends to three inches and three and a half; but that for extraordinary purposes only, such as the bottom of hammer-cloths, will run to nine inches.

The quality makes a difference in the price. It is frequently made of cotton mixed with worsted; and sometimes, for very superb carriages, it is made of silk only. There are other sorts of very narrow laces made for necessitous purposes, such as to seam the cloth with, or to cover the nailings; the one called seaming, the other pasting lace; the colours of which are made to match those in the broader patterns, but cannot form much of the figure, on account of the width. The pattern or figure of lace makes

no difference of expence, except when the arms or crest are worked in them, and then of course are extra, on account of the difference in workmanship. Fringes have also been greatly improved upon, and, like the laces, are to be valued according to their width and quality; as also the ornaments called button-hangers, which are mostly put on them with a very good effect. The common width, including the gimp head, is five inches and a half. To form any statement of the different prices of hammer-cloths and linings, it will be first needful to state the separate values of laces and fringes, and then the value of any may be collected from the quantity used on either occasion.

PRICE

PRICE OF LACES.

Inches Wide.		Worsted. per yard. s.	d.		Worsted and Cotton. per yard. s.	d.		Silk only. per yard. s.	d.
2	Figure,	1	4	—	1	8	—	4	0
	Crest,	2	0	—	2	4	—	4	8
	Arms,	2	8	—	3	0	—	5	4
2½	Figure,	2	0	—	2	4	—	6	0
	Crest,	2	3	—	3	0	—	6	8
	Arms,	3	4	—	3	8	—	7	4
3	Figure,	2	8	—	3	0	—	8	0
	Crest,	3	4	—	3	8	—	8	8
	Arms,	4	0	—	4	4	—	9	4
3½	Figure,	3	4	—	3	8	—	10	0
	Crest,	4	0	—	4	4	—	10	8
	Arms,	4	8	—	5	0	—	11	4
4	Figure,	4	0	—	4	4	—	12	0
	Crest,	4	8	—	5	8	—	12	8
	Arms,	5	4	—	5	8	—	13	4

Besides those broad and binding laces, there are some very narrow, that are invariable in their size, called seaming and pasting lace; and also small trimming, called roses and French strings. The seaming is what the cloth is seamed with; the pasting, what covers the nailings of the cloth; the roses, what goes round the holes of the cloth

for

for the hand-holders; and the French strings, what the glass strings are held by.

	Worsted. s.	d.		Cottton. s.	d.		Silk. s.	d.
Seaming lace, per yard,	0	6	-	0	6½	-	1	2
Pasting ditto, ditto,	0	5½	-	0	6	-	1	0
Roses ditto, ditto,	3	6	-	4	0	-	10	6
French strings, per pair,	2	0	-	2	6	-	6	0

If, on any occasion, a small quantity of broad lace is required of any particular pattern, and a loom is necessary to be set for it, an expence is incurred from 10s. to 20s. according to the pattern, besides the price of the lace. The least quantity a loom can be set for, is a trimming for a chaise.

SECT. 3.

FRINGES.

Silk fringe is never used but for inside work, such as to the curtains, which is so trifling a matter as to be unworthy any observation separate from the article to which it is used. Those of any signification are what are used to hammer-cloths, and are of two sorts, the plain and ornamented, (see Plate xiv. letter *b*), and are of the following width and prices. The value of the ornaments,

ornaments, which are afterwards put on the fringe, is proportioned by the number of buttons on each hanger, which is regulated by the depth of the fringe.

PRICE OF FRINGES.

per yard.

	Plain Worsted Fringe.		Worsted and Cotton.		Number of buttons to each hanger.
	s.	*d.*	*s.*	*d.*	
5 inches deep,	2	8	3	4	3
6 ditto,	3	4	4	0	4
7 ditto,	4	0	4	8	5
8 ditto,	4	8	5	4	6
9 ditto,	5	4	6	0	7

The ornaments or hangers to either fringe exactly double the price, allowing six hangers to a yard.

SECT. 4.

HOLDERS AND STRINGS.

By holders and strings is meant the lace, which is made up with tassels, and lined with cloth or leather, for the purpose of holding by, or drawing up the glasses with; they are usually made of a greater width than the other lace, with which the lining is trimmed.

In

In a complete trimming, there are three descriptions of holders or strings, viz. the hand-holders, the swing-holders, and the glass-holders or strings, (see Plate xii. letters *a*, *b*, *c*), each of which is the same in value: and these are called inside-holders. There are besides, footman-holders, which buckle on the back part of the body for the servant to hold by, sometimes used in sets (or four), and sometimes in pairs only: These holders are not always made of lace, but frequently of a strong wove worsted, called a webbing, in which only the colours, and not the figure, can be worked; they are the cheapest and most durable, but the lace-holders accord best with the other trimmings.

To state the value of holders, a reference must be had to the value of the different sorts of lace, adding to the quantity of lace for each holder the trimmings to complete them, such as tassels, plated buckles, and leather billets, with which they are made and hung on to the staples behind.

Every inside-holder takes about a yard of lace, and every footman-holder about a yard and half, being doubled for strength.

The expence of making up the holders, with lining, tassels and buckles, is equal to the price of the plain lace; so that doubling the value of the

the lace, gives the price of the holders: but where the crest or arms is worked in the lace, the value of the tassels, &c. is only to be added to the amount of the figured or plain pattern lace—for example, one yard and a half of lace for a footman-holder, two inches and a half wide, at 2s. per yard, is 3s. worth of lace; the tassel and the billet and buckle to complete it, is also 3s. which makes 6s. for a holder of this description. The same breadth and quantity of lace, with the arms worked thereon, is worth 5s. and the trimmings, &c. only 3s. which makes for this pattern-holder 8s.; so that a pair of worsted footman-holders, two inches and a half wide, common figure, is 10s.; if with arms worked in the lace, 16s.

PRICE OF HOLDERS.

Inches Wide.		Inside hand holders. s.	d.	Footman holders. Lace. s.	d.	Web. s.	d.
2	Worsted,	2	8	4	0	3	0
	Cotton,	3	4	5	0		
2½	Worsted,	4	0	6	0	4	0
	Cotton,	4	8	7	0		
3	Worsted,	5	4	8	0	5	0
	Cotton,	6	0	9	0		
3½	Worsted,	6	8	10	0	6	0
	Cotton,	7	4	11	0		
4	Worsted,	8	0	12	0	7	0
	Cotton,	8	8	12	0		

Web-holders are only made with worsted, on account that the cotton would so soon soil.

From these statements of trimmings, the value of every description of hammer-cloth or linings is to be obtained, from a knowledge of the quantity necessary to be used.

CHAP. X.

PLATE XV.

LININGS AND INSIDE FURNITURE OF BODIES.

The lining the inside of a body requires some attention to give it those advantages necessary for a Gentleman's carriage. A richness in its ornaments is the most material thing therein; and the difference of expence, which is principally in the lace, is so trifling when compared to its ornamental advantages, that it would never have been considered an object had it been fully known. The colours are the same in value, except scarlet or crimson, which make an addition of nearly one-third in the price of the cloth.

Those generally used are light-coloured cloths for close carriages, and dark or mixtures for open. The cloths should always be of the very best second, if not superfine; but second is what is mostly used. The quilting of the cloth with small

small ornaments also gives a richness to the lining, which should match the colours used in the trimmings; and the trimmings should be of such colours as are used in the liveries, of any choice pattern. The crest or arms worked in them produce a noble appearance; but if the width of it exceed three inches and a half, it looks heavy. A fullness of cloth to the seat-falls should always be allowed, and a lace of two inches and a half breadth for the holders used on the plainest occasions; that for binding the falls, pockets, &c. two inches; but as the value of different trimmings can only be known by a separate description of the ornaments used, a reference to them will be found very necessary.

SECT. I.

Letters *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, represent the various trimmings with which the linings and hammer-cloths are ornamented, and, on account of their numbers, are each described by small letters.

a, The hand-holders, are the loops for the hands to hold by, made of a yard and quarter of lace, cut in short lengths, and nailed on the standing pillars, through part of the lining and oval trimmings, called roses; a flat tassel ornaments the bottom piece.

b, The swing-holder, a long loop for the arm to rest in, made of a yard and a half of lace, with an ornamented button to loop in different holes, used instead of having elbows to project within the body.

c, The glass string, or holder, is what the glasses are drawn up by, made of a yard of lace, ornamented with a flat tassel at the one end, and nailed on the glass frame at the other; having button-holes worked, by which the glasses are hung to any agreeable height. Those holders are all lined with a thin leather, or cloth, the same as the lining, and have narrow lace, called French strings, fastened to them, which hold them when the glasses are up.

d, The binding lace, a lace of different widths, with a tape edge, with which the falls, the pockets, &c. of linings, are trimmed or bound on the edges.

e, The pasting lace, a narrow lace of about half an inch wide, with a taped edge of the same breadth. Its use is to nail the taped part over the other nailings of the cloth, and turning the lace side over, which is pasted down, covers all the nailings.

f, The seaming lace, a narrow lace of about 5-8ths of an inch broad, having a tape edge on each side. This lace is sewed round a small cord,

and

Plate XV.

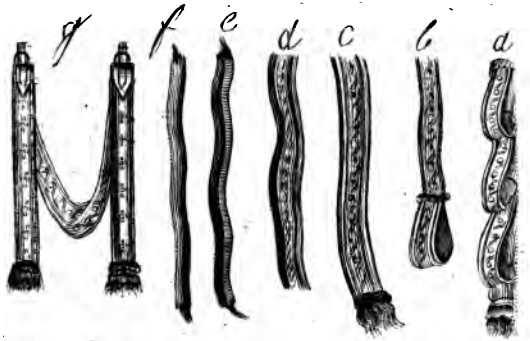


Fig. 11

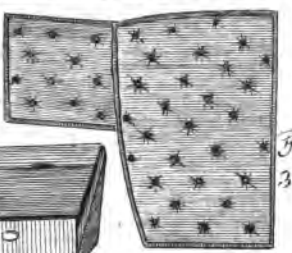


Fig. 3

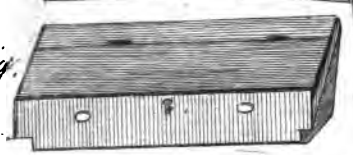


Fig. 10

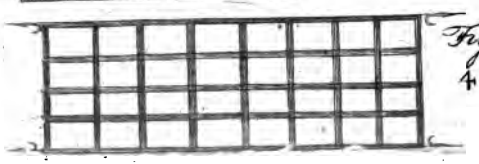


Fig. 4

Fig. 5

Fig. 6

Fig. 8

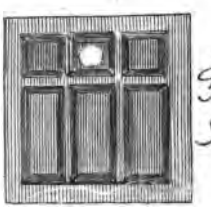
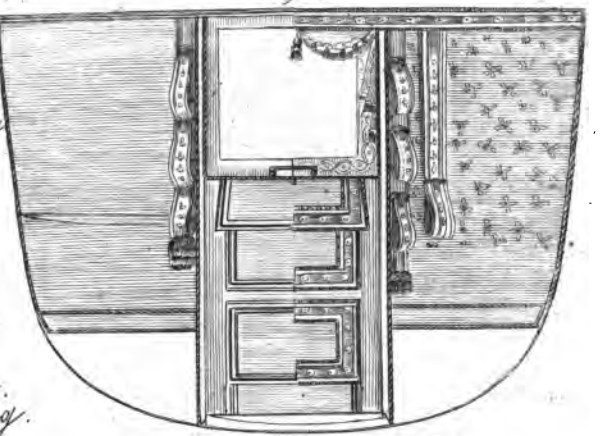


Fig. 9

Fig. 1.



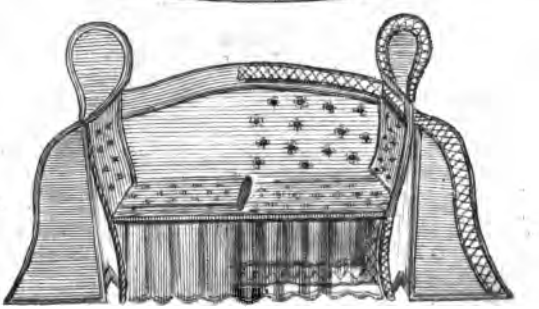


Fig. 2.

and then sewed in the corner seams of the cloth, or nailed on the edges of the doors or windows.

g, The footman-holders, are conveniences for the servants to hold by, which, if made of lace, are of two stripes, sewed together for strength; but if made of web, are left open, being of a greater strength: they are ornamented with round or flat tassels, according to the width. The double holders are four in number, the single two; but the single pair has mostly a piece hanging across between the two; they are made up with leather billets and buckles, and are buckled on to staples fixed on the back.

b, The fringes, which are seldom used but to hammer-cloths; one half is represented plain, and the other ornamented with hangers, as fringes are now usually made.

Fig. 1, The inside view of a coach body represented two ways trimmed; the one half shews the plain method of trimming, the other the full ornamented.

The plain side has the pockets, the falls and valents, trimmed with a narrow two inch lace, and the holders with a two and half. There are many linings used plainer than this; but agreeable to the present fashion, this is as plain as a lining ought to be, and should be an established rule to go by.

The

The ornamented side has the pockets, falls and valents trimmed with a broad three inch lace, of the same width with the holders, having also an extra side or swing-holder for the arm to sling in. The sides are quilted with small ornaments, made either of cloth or worsted. It shews a festoon curtain, a Venetian blind, and the glass frame covered with lace, instead of cloth.

Fig. 2, The inside view of a chaise lining, represented with real doors, to shew the sides and back trimmings thereof. The plain side of this body has the wings and falls bound only with a narrow inch and half trimming; but there are many chaise linings that have no lace round those parts, further than that which the cloth is seamed with; but that is a very plain and ancient method of finishing.

The cushion to the plain trimming is represented only in one length, with a cushion for the driver to sit on. The ornamented side shews the back wings and sides trimmed with a broad two inch and half lace; the back and sides quilted the same as the coach; the falls are bound with a narrow, and trimmed above with a broad lace, which is the method frequently used of trimming the falls of other linings.

The cushion for this, though not represented, is only on the one half of the seat, having a box

on

on the other, on which a deeper cushion is to be placed for the driver to sit on; which cushion must also have a fall, trimmed the same as the other, to cover the box.

SECT. 2.

Fig. 3, A squab, or sleeping cushion; a thin cushion faced either with leather or silk, stuffed and quilted; they are occasionally added to the insides of close carriages, for the advantage of ease for the head or shoulders to incline against; they are sometimes made faced on both sides with leather and silk, to be used alternately. Those for the back part are generally made of a smaller size, extending only half the depth of the side one; they are bound with a narrow lace or silk ribbon, and fitted on with buttons or strings.

SECT. 3.

Fig. 4, A net, a convenience sometimes placed across the roof between the doors, for the purpose of containing light parcels free from injury. They are made either with narrow thin lace like a tape, or with worsted line; and may be fixed, or occasionally hung on hooks, as described.

SECT.

SECT. 4.

Fig. 5, The spring curtain, a silk curtain fixed to a long barrel containing a spring, which admits the curtain to be drawn down to an agreeable depth, and, by means of a trigger, is instantly drawn up to its place. A stick is sewed in the silk at the bottom, with loops at the ends, for the line to pass through; which line steadies the sudden motion of the curtain. These things are so convenient, that they are indispensably necessary to almost every kind of close carriage. The Venetian blinds are substitutes for them in a great measure, but only when the glasses are not wanted to be put up.

SECT. 5.

Fig. 6, The festoon curtain; a silk curtain trimmed with silk fringe; mostly intended for ornament only, being found inconvenient for use; they are fixed over the lights or windows of the doors as represented, and are sometimes made to hang in a drapery form on the sides, but mostly are used to the top only. They furnish very much the inside of a carriage, but are of no utility otherways.

SECT.

SECT. 6.

Fig. 7, The glass, and glass frame: the glass frame is made of thin oak; the one side is represented covered with lace, the other with cloth, in the usual way. The glass should always be of the best plate; but a great difficulty lies in procuring them, particularly of English manufacture: the French are the best in use. The preferable glasses are those which are free from bladders or veins; but to clear them from those faults, they are frequently reduced to little more than the substance of crown or common window-glass. It is almost impossible to select them free from bladders; but veins should never be admitted to pass. Their value is only to be rated by their size, excepting if diamond cut, or bevelled round the edges, which is now out of fashion.

SECT. 7.

Fig. 8, The Venetian blind, a blind frequently used as a substitute for the common shutter and spring curtain, answering either purpose, with the preferable advantage, in hot weather, of admitting the air and excluding the sun, and, when closed,

serves the purpose of the shutter, to prevent dust from soiling the carriage while standing by. It acts by means of a spring bolt, with which it is opened to any extent at pleasure. It is mostly painted a verdigrease green, but sometimes, to handsome carriages, is painted of variegated colours, and varnished as the pannels are.

SECT. 8.

Fig. 9, The common shutter, a shutter which is made of mahogany in a neat manner, with six small pannels, and a small glass window in the upper middle one: the neatest has a small moulding on the edge of the framings: they all have a lace tape in the middle, and a loop at the top to pull them up by.

SECT. 9.

Fig. 10, The seat box, a box made to slide under the seat, to fill that vacant place. It is made portable, and convenient to carry linen, &c. and is mostly of thin oak or mahogany.

SECT.

SECT. 10.

Fig. 11, The driving box; a box made for the half top of the seat of a chaise, &c. for the cushion to be placed on, to raise the driver. It is made as the other is, and convenient for the same purposes.

SECT. 11.

False linings and linen linings, used to cover and preserve the others if good, or to hide them if bad: they are made of the linen usually called yard-wide, and at about 2s. 3d. per yard in value. The roofs are seldom covered, and as much of the trimmings as possible should be shewn.

To bind the edges of the linen with a border in imitation of lace, is an additional ornament to it, and is now frequently done.

All those articles may be considered as appendages to the inside of carriages; and their value being separately stated, will enable any person to regulate the different modes of furnishing any description thereof.

QUANTITY OF MATERIALS USED FOR LININGS.

The variety of bodies, and the different methods of trimming them with lace, and furnishing them with other conveniences, require them to be separately stated; and that the different prices may be more easily collected, the quantities of cloth and lace used for each kind of trimming should also be given previous to the prices being stated, that from one statement the value of all the others may be known.

		YARDS.			
		Laces.		Cloth.	
		Narrow seaming.	Broad Binding.	Broad-Cloths	Linen.
As Fig. 2 and 3.	A coach or landau,	78	22	$10\frac{1}{2}$	18
	A chariot or demi-landau, - -	54	18	8	14
	A phaeton or chaise,	18	6	$2\frac{1}{2}$	5
Wings to chaise or phaeton, -		—	4	$\frac{1}{2}$	1
Head to ditto, - - -		5	—	3	6

PRICE

PRICE of LININGS.

The following are the prices of the various linings complete, after having been prepared, as before mentioned in the first statements of bodies, with the stuffing up in canvas; so that the value of new-lining an old carriage is the same expence as for a new one.

	Coach. £. s. d.	Chariot. £. s. d.	Chaise or Phaeton. With head. £. s. d.	With wings. £. s. d.
The body lined with second cloth, and trimmed with a two inch worsted lace, and two inches and a half for holders,	15 10 0	12 0 0	7 15 0	5 10 0
Extras to be added to the above description:				
The body, if made to open, or landau fashion, - -	1 11 6	1 1 0	-- -- --	-- -- --
The cloth superfine, instead of second, - - -	4 0 0	3 0 0	2 0 0	1 0 0
Morocco leather, instead of cloth, - - - -	8 0 0	6 0 0	4 0 0	2 0 0
The side of the lining quilted, - - - - -	1 1 0	0 10 6	0 10 6	0 10 6
Swing-holders, and the other laces, $2\frac{1}{2}$ inch broad,	1 11 6	0 18 0	0 2 6	0 3 6
Ditto, - ditto, 3 ditto, -	2 7 0	1 2 0	0 5 0	0 7 0
Ditto, - ditto, $3\frac{1}{4}$ ditto, -	3 3 0	1 18 0	0 7 6	0 10 6
Ditto, - ditto, 4 ditto, -	3 18 0	2 3 0	0 10 0	0 14 0
A false lining to cover the other, except the roof, -	3 10 0	2 15 0	2 2 0	1 4 0
Ditto, with the roof covered, - - - - -	4 0 0	3 3 0	-- -- --	-- -- --
Ditto, with $2\frac{1}{2}$ inch bordering to imitate lace trimmings,	5 5 0	4 10 0	2 10 0	1 8 0

	Coach. £. s. d.	Chariot. £. s. d.	Phaeton or Chaise. £. s. d.
A set of silk squabs, with half backs, faced on one side with silk only, -	4 0 0	2 12 6	
Ditto with Morocco leather, - -	4 15 0	3 3 0	
Ditto, faced with silk and leather, -	5 15 6	3 13 6	
A net for the roof, either flat or round string, - - - - - -	0 10 6	0 10 6	
A set of silk spring curtains, - -	3 3 0	3 0 0	
A set of festoon curtains, tops only, -	2 12 6	2 12 6	
A set of ditto with side drapery, - -	3 13 6	3 13 6	
A set of glasses and glass frames, covered with cloth, the size of the glass usually about 20 inches square, - -	6 10 0	6 15 0	
Ditto, covered with lace 2 inches wide,	7 7 0	7 10 0	
A set of Venetian blinds, - - -	4 10 0	4 10 0	
A set of mahogany shutters, - -	1 15 0	1 15 0	
A carpet or oil-cloth for the bottom, - - - - -	0 7 6	0 10 6	0 10 6
Trunks to slide under the seat,	0 15 0	1 10 0	0 15 0

CHAP. XI.

HAMMER-CLOTHS.

Hammer-cloths are among the principal ornaments to a carriage; they are a cloth covering to the coachman's seat, made to various patterns agreeable to the occupier's fancy. The fullness of the plaiting of the cloth, its depth, and the quantity of trimmings thereon, proportions the expence

expence to almost any amount; but those of the general sort are made of a livery cloth, of six breadths, which measures nine yards round, and about twenty-eight inches deep, lined with a strong coarse linen; the size of the seat in a great measure regulates the number of breadths of cloth to be used, as the same fullness would appear with five breadths on a seat of three yards round, as six breadths on a seat of four yards, which is the general size now in use; and no hammer-cloth ought to be made with less. The top rows of fringe and lace are put on after the hammer-cloth is made up, and takes no more in quantity than what the seat measures; the others extend round the fullness of the cloth.

SECT. I.

OIL-SKIN HAMMER-CLOTHS.

Oil-skin hammer-cloths are used for the preservation of the others in wet weather; there are three sorts of them, viz. the common oiled linen, the painted linen, and the painted prepared woollen or patent cloth.

The plain oil-skin, though called a skin, is only a thin linen prepared or dressed with oil, and of a very slender texture, owing to the effect the oil has upon it, which it soon rots.

SECT.

The painted linen is an imitation only of the patent woollen, prepared with colours to resemble them; but are little superior to the common sort, yet are often imposed in their stead, though of not one half their value in expence or service.

The patent woollen is prepared in some secret way on a thin woollen cloth, that, for durability, exceeds the service of two of the others, but are also considerably greater in expence: they are painted of various patterns, to suit most colours that the carriage is painted of. The tops of these are always made with a ridge on each side of the coachman's sitting place, which makes a channel to convey the wet from running under him, and have also thin boards placed up the four corners to preserve their shape.

SECT. 2.

PLATE XVI.

Fig. 1, A plain hammer-cloth bound at top and bottom, with a narrow binding lace two inches wide; this represents also a plain oil linen cover of the common sort.

Fig. 2, Represents the patent woollen and the painted linen covers, which so nearly resemble each

Plate XVI.

Fig. 1.

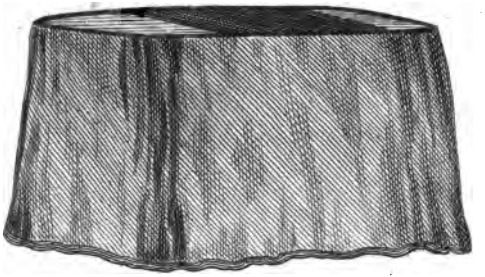


Fig. 2.

Fig. 4.

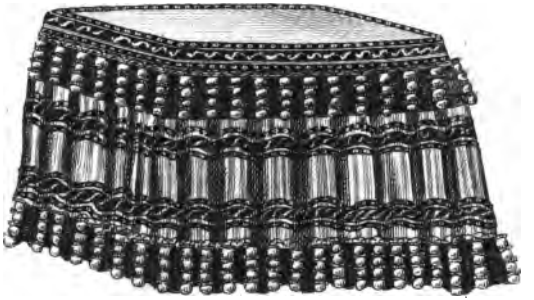
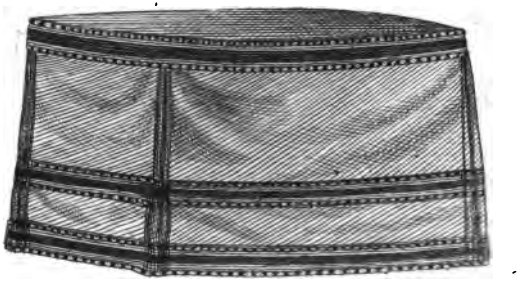


Fig. 3.



each other, that the difference can only be discovered on a near examination; the square place on the top is the sitting place for the coachman, which is made of woollen cloth.

Fig. 3, A middling trimmed hammer-cloth; the cloth of two colours, trimmed with three rows of lace two inches and a half wide: this is the kind of hammer-cloth generally used as a cover, made of four breadths, and only plaited at the corners; but if full plaited, the quantity is as usual.

Fig. 4, A fuller trimmed hammer-cloth, having three rows of lace two inches and a half wide, and two of ornamented fringe five inches deep.

PLATE XVII.

Fig. 5, A full trimmed hammer-cloth, with lace three inches wide, having four rows of lace, and three of ornamented fringe, so as almost wholly to cover the cloth by the trimmings.

Fig. 6, The present fashion of hammer-cloths, the trimmings of which are broad, and placed on the bottom only; the lace in the middle is four, and the fringe nine inches deep; a plainer lace is at top and bottom, two and a half inches broad for

the binding; the cloth is of two colours to match the livery; the crests and mantlings are embroidered on the ends.

Fig. 7, A handsome hammer-cloth, trimmed with a row of lace at top and bottom two and a half inches wide, and a broad four inch lace in the middle, two rows of nine inch fringe, and silk drapery on each fringe.

Fig. 8, A hammer-cloth bound top and bottom with a lace two and a half inches broad: a row of velvet is placed above the fringe, bound with a narrow lace; also a row of velvet Vandyked at the top bound the same way, and a deep nine inch fringe at the bottom, with silk ornaments; the arms, crest, and ornament foliage mantle, are worked in embroidery on the ends.

Fig. 9, Represents the embroidery now worn upon hammer-cloths, which is done in various fanciful devices, the principal of which are the arms, crests and cyphers worked, on the ground plain, or in mantles of the curtain or foliage patterns. They are mostly worked in worsted, and the separate prices are stated with those of hammer-cloths.

PRICE

Fig. 7

Fig. 5

Fig. 9

Fig. 6

Fig. 8

PRICE OF HAMMER-CLOTHS.

To obtain any correct information of the value of any sort of hammer-cloths, it is necessary to know the quantity of cloth and trimmings they are made-up with, which depends on the size of the seat: it measuring in common four yards round, requires nine yards to plait round it, with a proper fullness, which is six breadths of 6-quarter broad cloth sewed together, cut in lengths of 7-8ths or 3-4ths of a yard; so that a six breadth hammer-cloth, which is the usual size, takes nine yards of each trimming to go round the cloth, and four yards for the top; so that to add or reduce a breadth, is to allow one-sixth from the following statements, or one and a half yard of each trimming, and 7-8ths of a yard of cloth, for every breadth added or omitted.

The patterns of hammer-cloths described in Plates xvi. and xvii. being what are generally used, the separate prices are here stated, to convey a ready information of them, and save the trouble of collecting the amounts from the former statements. Livery cloth being what is generally used, the following statements include that only.

		Livery. £.	s.	d.	Second. £.	s.	d.	Superfine. £.	s.	d.
A hammer-cloth made up of six breadths, containing 6½ yards of broad-cloth, without trimmings,		4	10	0	5	10	0	6	10	0
Ditto, with the following trimmings:		Lace only.			Lace and Fringe.			Ditto with Fringe ornamented.		
13 yds. of 2 inch lace,	Fig. 1,	5	5	0	—	—	—	—	—	—
22 yds. of 2½ inch lace,	Fig. 3,	6	6	0	—	—	—	—	—	—
22 yds. of 2¼ inch lace and 9 yds. of 5 inch fringe,	Fig. 4,	—	—	—	7	10	0	9	9	0
31 yds. of 3 inch lace and 22 yds. of 6 inch fringe,	Fig. 5,	—	—	—	13	8	0	17	0	0
13 yds. of 2½ inch lace, 9 yds. of 4 inch lace, and 9 yds. of 9 inch fringe, worsted crest and mantling on the ends,	Fig. 6,	—	—	—	11	11	0	14	0	0
13 yds. of 2½ inch lace, 9 yds. of 4 inch lace, and 13 yds. of 7 inch fringe, two rows of silk droppings,	Fig. 7,	—	—	—	16	16	0	18	12	0
13 yds. of 2¼ inch lace, 9 yds. of 8 inch fringe, 13 yds. of 4 inch velvet at 4s. and 36 yds. of 1 inch binding at 1s. silk crest and mantling on the ends,	Fig. 8,	—	—	—	14	7	0	16	10	0
EMBROIDERY.		Worsted.			Silk.					
Crest or cyphers only,		1	0	0	1	5	0			
Crests and mantles only,		1	10	0	2	0	0			
Arms and crests,		1	15	0	2	10	0			
Arms, crests, and mantles,		2	10	0	3	3	0			

CHAP. XII.

METAL AND PLATED FURNITURE FOR BODIES, &c.

SECT. I.

The necessary conveniences and ornaments for the bodies being of various descriptions, and as variously finished, it is necessary to introduce them separately, that the variety may be the better understood: some of them form a part of the original bodies; which being articles necessary to build with, their value is included in the former statement, and are only here introduced for a general description of their form: some of the other articles have also been formerly represented in the subject of iron-work; but being what are frequently plated, they are here described under that head, and the increased amount, for plating only, is added: there are some which are only occasionally used, and others that are different in their form from each other, which makes it necessary to treat of them separate from the bodies, that their different values may be known, and their advantages the better understood, as represented in Plate xviii.

FIG.

FIG. 1. DOOR PLATES.

The door plates, which are made of brass, are fixed round the edges of the door with screws, having in the solid brass a bead or moulding which forms two rabbets; the one laps on and confines the door pannels, the other covers the joints when the door is shut.

FIG. 2. DOOR HINGES.

Strong hinges of a peculiar form, of either brass or iron, having a ridge on the outside, to stop the door from turning too far back in the opening.

FIG. 3. DOOR LOCKS AND HANDLES.

A door box lock is a flat square-formed box brazed on a flat iron plate, having within the box a broad flat tongue or bolt, which is turned by a square spindle fixed through it, on the end of which spindle the handle *A* is hung, by which the bolt is turned: the form of the handle should be made agreeable to the pattern of the buckles used for the braces, whether round, square, oval, or octagon. Those box locks are mortoised in the door

door pillars, and fixed by the plate to which they are brazed: a flat plate with a square hole is sunk in the opposite pillar over the mortoise which receives the tongue. The handles are mostly plated, and the price is included in the former statements of bodies. See price of plating, for their separate value.

FIG. 4. PRIVATE LOCKS

Are box locks made in the same form, and fixed in the standing pillars the same way as the others are in the door pillars; they are sometimes made with wards, and a bolt, the same as common locks, and are turned with a common key, but are most frequently made as the door-locks, to turn with a pipe-key; the key hole is covered with a double scutchion. This being an article for convenience, only occasionally used, its value must be added to the former statements.

FIG. 5. DOVE-TAIL KETCHES

Are two small iron machines, which fit closely in a dove-tail joint within each other, and are separately fixed on the shutting door and standing pillars; their use is to prevent the door from dropping or sinking by its weight.

FIG.

FIG. 6 AND 7. GLASS ROLLERS.

Are what belong to the inside work of a body for the assistance of drawing up the glasses with; they are made of several patterns, from three to four inches long, of brass, and only plated with a thin leaf of silver; as they do not require to be cleaned like the outside plating, they answer the purpose sufficiently well; the sunk rollers are at present most in use, and are the best, being more out of the way.

FIG. 8. BUTTONS OR STUDS

Are nails with large brass heads; if used to the insides of bodies, they are then silvered; but if used for outside purposes, such as knee-boots, they should be plated.

PRICE OF OCCASIONAL REQUISITES.

Most of those articles are what is necessary for building the body with, and are included in the value of bodies in the former statements: what are only occasionally used will here be stated.

	£.	s.	d.
A pair of private locks and bolts to the shutters, complete, for coach or chariot - -	1	1	0
A set of silvered glass rollers, four inches long	0	10	6
A single silvered knee-boot button - -	0	0	4

If plated, double price.

SECT.

SECT. 2.

PLATING.

Plating is a superficial covering to the buckles and other furniture of a carriage, either with silver or metal of any other malleable quality. Nothing has ever been introduced with a better effect than this mode of ornament; in particular the silver-plating, which is now become so general that almost every hackney carriage exhibits some portion of it.

There is no one article in the carriage can be of a more deceitful quality than this, as it can be manufactured at almost any price, even cheaper than the original brass ornaments, and yet look well; in particular the flat plates and beaded mouldings, being manufactured with different proportions of silver soldered on to a certain quantity of metal, which, after being thus plated, is rolled or flatted in mills to any degree of thinness, leaving sometimes but barely the colour of the silver, which is frequently not thicker than a common leaf of beaten silver. Other plated articles, which are wrought by hand, such as buckles, handles, terrets, &c. are plated in a different way, and cannot be done but with some degree

of thickness, the thinnest of which will wear some considerable time longer than the inferior rolled plating. The difference of light and strong plating is an object worth attending to, as there is more than double the odds of price between the two extremes: it can be manufactured to any value, particularly in the beads or flat plating. A dependence must here rest on the manufacturer for the quality, as the appearance is so exact, that unless analysed, no other person can tell the proportion they bear. The patterns of the furniture are numerous; those are the best calculated for wear that have no raised or sharp edges; the round moulded furniture has the fairest chance, and is for the most part the cheapest; all ornaments that are raised, such as scrolls, crests, &c. should be in silver, as the difficulty of cleaning soon spoils them if only plated.—It is next to impossible to enumerate every article that is sometimes only plated; what is most generally used will only be described: there are a number of plated articles used to harness, which will not here be noticed, but will be in the second volume; all that will be here described is the furniture for the carriage, which principally lies in the mouldings, head plates and joints.

PLATED

PLATED MOULDINGS.

Plated mouldings are of various patterns and sizes, and of as many different qualities; but to reduce the variety to a few rules, will furnish sufficient information. The insides are filled with a soft metal, with shanks soldered therein for the beads to be fastened on with. The quality of the plating should be such, that in the constant use of a carriage, with proper cleaning, it shall be perfect four years, and remain for seven without wearing through, except at the edges. The middling sort of plating should wear two years perfect, and three without wearing through, except at the edges. On the inferior sort there can be no dependence whatever. The size of the mouldings proportions the value, which is measured across the bottom, and sold by the foot, including the putting on. The patterns make no material difference in the expence, as they are all drawn through a mould to any form; the difference in trouble is only in the setting and burnishing; therefore, to proportion the prices to a certain width and quality, will answer every purpose of information.

Fig. 8, Is the small quill bead, mostly put on in double rows, which has a very neat appearance.

Fig. 9, Is the general sort of moulding in use, which looks bold, and wears well.

Fig. 10, Is a neat pattern, hollow in the middle, and rounding on the sides, and, having no sharp edges, wears well.

Fig. 11, The common flat moulding generally used: the edges of this pattern are soon rubbed through by cleaning.

Fig. 12, A fancy moulding, used but seldom to any thing but handsome carriages, and mostly is made of a double angle to clip the corner: the many edges require this moulding to be strongly plated, to wear well.

Fig. 13, A very common pattern moulding, and looks rich, but on account of the raised edges does not wear well.

Fig. 14, A scroll and tip ornament, made to give a finished appearance to where the bead terminates at the ends of the bottom, sides, &c. These ornaments should always be made of thin silver.

PRICE OF MOULDINGS. FIG. 8, 9, 10, &c.

Size. Inch.	Best. s.	Best. d.	Middling. s.	Middling. d.	Inferior. s.	Inferior. d.
2-8ths.	1	3	1	0	0	9
3-8ths.	1	9	1	6	1	0
4-8ths.	2	3	1	9	1	3
5-8ths.	2	9	2	3	1	6
6-8ths.	3	3	2	9	1	9

SCROLL,

SCROLL AND TIP ORNAMENTS. FIG. 14.

	Silver. s.	d.	Best plated Metal. s.	d.
A pair of scrol ornaments,	8	0	6	0
A pair of tip ornaments,	6	0	4	0

SECT. 3.

FRAMES.

For many parts of the bodies the mouldings are obliged to be made into frames, by first setting them to the form intended, and then soldering the joints previous to putting them on, for which an extraordinary charge of 9d. for each joint, and 9d. for each set, is to be allowed, in addition to the quantity of moulding used; and an inch over the exact measure is to be allowed for jointing, but, unless soldered at the joints, ought only to be charged with the other mouldings, allowing 9d. for each set.

Fig. 15, A plated wing frame, is a broad cased moulding, with which the wing frame is covered: besides allowing for the width and measure, five shillings each for putting them on should be

be added; the pattern in general runs large, and of about 3 feet 6 inches in length.

Fig. 16, An octagon frame, formed to the back light or window, put on previous to the glass being fixed.

Fig. 17, A whole sword case frame; a plated moulding bent in the form of the sword case, and fixed on both ends thereof.

Fig. 18, A half sword case frame; a plated moulding formed to the outer shape only of the sword case.

Fig. 19, A sham or real door frame; a moulding shaped to the pattern of the contracted part of the side of a chaise or phaeton body.

PRICE OF PLATED FRAMES.

	Best.			Middling.			Inferior.		
	L.	s.	d.	L.	s.	d.	L.	s.	d.
An octagon or back light frame,	0	10	0	0	9	0	0	8	0
A pair of sword-case frames,	0	11	0	0	10	0	0	9	0
A pair of half ditto - -	0	11	0	0	1	0	0	1	0
A pair of wing frames, - -	1	15	0	1	10	0	1	1	0

SECT.

SECT. 4.

HEAD PLATES.

These are ornaments made of rolled metal, to fix on the upper quarters of a coach or chariot, and on the slats of a chaise head; they are of various patterns, and of different qualities of metal; but should be in proportion to the beadings with which the body is plated: they are made of a fancy device, or are left open for the crest to be placed within; the patterns, except with crests, make no material difference in the price; the size and quality make the only difference worth notice.

Fig. 20, A fancy worked head plate, the middle and bottom ornamented with chasing and piercing.

Fig. 21, A fashionable bead rim head plate for a crest to go in, sometimes ornamented with a bottom husk the same as the other.

Fig. 22, A crest which is sometimes made large, and wore alone, but mostly is made of a size to be placed within the circle: of these there are different sorts; some are pierced out of flat metal, and a little raised from the back, in imitation of embossed work; others are properly embossed with thin silver: the circles, if raised, should also be made of thin silver; the difference of expence is but trifling to the advantage.

PRICE

PRICE OF HEAD PLATES PER SET.

FIG. 20, 21, 22.

Number of head plates to a coach 12, chariot 6, phaeton 9.

	Coach.	Chariot.	Phaeton.
	£. s.	£. s.	£. s.
Fancy device of best plated metal,	2 10	1 5	1 5
Ditto, of middling,	2 2	1 1	1 1
Ditto, of inferior,	1 16	0 18	0 18
A set of crests raised, of the best plated metal,	1 10	0 15	0 15
A set of circles for ditto of best metal	1 10	0 15	0 15
A set of crests of silver	3 0	1 10	1 10
A set of circles of silver,	1 16	0 18	0 18

SECT. 4.

PLATED JOINTS, REAL AND SHAM

FIG. 23, 24, 25.

Plated joints give to the body a very bold rich appearance, for which reason they are frequently used to bodies with fixed heads, but are only for ornament, in imitation of the real joints: there is a material difference in the value of them; the real joint is obliged to be plated both on the out and inside on the eight squares; the sham joint is made thin and broad, and plated only on the outside on the three squares, which are made broader than the others, for show; others are made thick and heavy, in exact imitation of the

the real joint, and plated on the five squares; those are all plated with silver soldered on the iron; the thinnest of which will wear equal to the best moulding, and what is bestowed on them, more than will sufficiently wear with the other furniture, is superfluous; the nut screws, by which the sham or real joints are fixed, are plated, and sometimes the props on which the joints are supported from the sides are also plated, and have a broad flat cap, plated and put thereon; chaise joints are charged in sets, landau joints only in pairs.

Chaise head and landau joints painted black, are included in the value with the head of the chaise and the body of the landau. The additional expence for plating is only to be added here; sham joints are never used otherwise than plated, and their value, with putting on, &c. is here stated in full.

PRICE OF REAL AND SHAM JOINTS.

	£.		
A set for a landau,	12	12	
A set for a chair or curricle,	8	0	
A pair for a landaulet,	6	6	
A set of thick sham joints for a coach,	7	0	
A set of thin light ditto, ditto,	6	0	
A pair of thick sham joints for a chariot,	3	10	
A pair of thin light ditto, ditto,	3	0	
Four barrel props and caps for a pair of either,	1	4	

SECT. 5.

PLATED BODY LOOPS.

Fig. 26. Those are plated with silver in the same manner as the joints, but generally are only plated in particular places, from the neck to the loop, either on the small outside edges, the star, or the flat bolt heads; sometimes the whole surface from the neck to the loop is plated, the value of the loop having been before included with the body; the price here stated is only for the extra amount of plating.

PRICE OF BODY LOOPS PER PAIR.

	£.	s.	d.
Plating the whole surface from the neck,	3	13	6
Ditto the four star heads,	0	10	0
Ditto the four plain heads,	0	8	0
Ditto the two top outer edges,	0	6	0

SECT. 6.

PLATED POLE HOOK.

Fig. 27. This is a convenience for drawing by, but is frequently put on the end of the pole for ornament only: it is plated the same as the others upon

upon iron, sometimes is only painted, but more frequently used plated than otherwise: each value is here stated, including the buckle and strap, and fixing it on the pole; there are three sizes of them in general use.

PRICE OF POLE HOOKS.

	Plain.				Plated.		
	£.	s.	d.		£.	s.	d.
Large size, for a coach,	0	10	0	—	2	10	0
Middle ditto, for a chariot,	0	9	0	—	2	2	0
Small ditto, for a phaeton,	0	8	0	—	1	18	0

SECT. 7.

PLATED BUCKLES.

Fig. 28. The plated buckles used to a carriage are few, but large, and are plated like the rest on iron; the main brace buckles are the principal, those besides are for the cheek braces; sometimes the pole-piece buckles are plated, but in general are only polished iron; their value is regulated by their size as follows:

PRICE OF BUCKLES PER PAIR.

Inches	2¾		2½		2¼		2		1¾		1½	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Half buckles,	7	0	6	0	5	0	4	0	3	0	2	0
Whole ditto,	11	0	9	0	7	6	6	0	4	0	3	0

SECT. 8.

PLATED CHECK BRACE RINGS AND DOOR HANDLES.

Fig. 29, 30. Those screw rings and door-handles are always plated like the rest of the iron-work, the rings only the value of plating in addition to the former statements with bodies; but as on many occasions they are required separate, it will be necessary to price them both plain and plated. Plated handles are included in the former statements.

PRICE OF CHECK BRACE RINGS AND DOOR HANDLES PER PAIR.

	Plain.			Plated.	
	s.	*d.*		*s.*	*d.*
Check brace rings, - - -	2	0	—	8	0
Door handles, - - - -	3	0	—	12	0

SECT. 9.

PLATED WHEEL HOOPS.

Fig. 31. It is very common to plate the hoops of the wheels both at the back and fore end of the nave. The rim of the fore hoop is considerably broader than that of the hind one; but the circumference being less, their value is nearly equal. They

They are great ornaments to the carriage, and, with care, will last to three or four sets of wheels, according as they are plated. There are two methods of plating hoops, the one to plate with silver on the iron, the same as those last articles, but they mostly are only cased with the rolled plated metal; they may be reckoned of three sizes, for coach, chariot, phaeton or chaise.

WHEEL HOOPS PER PAIR.

	Coach.		Chariot.			Phaeton.	
	£.	s.	£.	s.	d.	£	s.
Plated with silver on iron, -	3	3	2	12	6	2	2
Cased with plated metal, best,	1	15	1	10	0	1	5
Cased with plated metal, mid.	1	10	1	5	0	1	0
Cased with plated metal, infer.	1	5	1	1	0	0	15

SECT. 10.

BRASS AND COLOURED METAL FURNITURE.

The furniture and ornaments to a carriage were originally made of brass; and, now that silver plating has become so common, brass is again become more fashionable, but improved from the original manner of making it: the common brass furniture is usually made out of the solid metal, such as, the mouldings, head plates, buckles,

buckles, and rings; but the other furniture where the strength of iron is necessary, such as the joints, is plated with brass, in the same manner as when plated with silver. There is also a metal used, which is a composition of brass and copper, which looks well, and is more maleable than brass for plating with; the principal objection to those metals is, that they soon tarnish and canker, and are much more difficult to clean than silver plating.

PRICE

PRICE OF BRASS AND COLOURED METAL FURNITURE.

The price for silver plating being so much reduced, makes the difference between it and brass furniture not so great as many people imagine. To take it in general, the common brass furniture is about one half, and the composition is about two-thirds of the price of the best plated silver.

	Size of Inch.	Composition Metal. £.	s.	d.	Brass. £.	s.	d.
MOULDINGS.	2/8	0	0	10	0	0	8
	3/8	0	1	2	0	0	10½
	4/8	0	1	6	0	1	1½
	5/8	0	1	10	0	1	4½
	6/8	0	2	2	0	1	9½
Scroll ornaments per pair, -		0	4	0	0	3	0
Tip ditto, ditto, -		0	2	8	0	2	0
FRAMES.							
An octagon back light, -		0	7	8	0	5	0
A pair of whole sword case,		0	8	4	0	5	6
A pair of half ditto, - -		0	5	4	0	4	0
A pair of wings, - -		1	4	0	0	18	0
HEAD PLATES (THE SET) FOR A COACH.							
Fancy device, - - -		1	13	0	1	5	0
Crests embossed, - -		2	0	0	1	10	0
Circles, - - - -		1	0	0	1	5	0
HEAD PLATES (THE SET) FOR A CHARIOT.							
Fancy device, - - -		1	6	6	0	12	6
Crests embossed, - -		1	0	0	0	15	0
Circles, - - - -		0	10	0	0	7	6
HEAD PLATES (THE SET) FOR A PHAETON OR CHAISE.							
Fancy device, - - - -		1	15	0	0	16	0
Crests embossed, - - -		1	6	0	1	0	0
Circles, - - - - -		0	12	0	0	10	0

	Composition Metal. £.	s.	d.	Brass. £.	s.	d.
JOINTS.						
A set for a landau, - -	8	8	0	6	6	0
A pair for a demi-landau, -	4	4	0	3	3	0
A set for a chaise, - -	5	5	0	4	4	0
SHAM JOINTS.						
A set for a coach, thick, -	4	12	0	3	10	0
A pair for a chariot, ditto, -	2	6	6	1	3	0
A set for a coach, thin, -	4	0	0	3	0	0
A pair for a chariot, ditto, -	2	0	0	1	15	0
BODY LOOPS PER PAIR.						
Plating the whole surface, -	2	6	0	1	12	0
The four star bolt heads, -	0	6	6	0	5	0
The four plain bolt heads, -	0	5	4	0	4	0
The top outside edges, -	0	4	0	0	3	0
A POLE-HOOK PLATED.						
A large pole-hook, - -	1	15	0	1	6	0
A middle ditto, - -	1	8	0	1	1	0
A small ditto, - -	0	18	6	0	15	0
Half buckles per pair, 2¾	0	4	6	0	3	6
2½	0	4	0	0	3	0
2¼	0	3	0	0	2	6
1¾	0	2	0	0	1	6
1½	0	1	4	0	1	0
Whole buckles per pair, 2¾	0	7	0	0	5	6
2½	0	6	0	0	4	6
2¼	0	5	0	0	3	9
2	0	4	0	0	3	0
1¾	0	3	6	0	2	6
1½	0	2	6	0	2	0
Check brace rings per pair, -	0	5	6	0	4	0
Door handles ditto, -	0	8	0	0	6	0
WHEEL HOOPS.						
Large hoops per pair, -	2	2	0	1	11	6
Middle hoops ditto - -	1	11	0	1	7	0
Small hoops ditto - -	1	8	0	1	1	0

CHAP.

Pl: XVIII.

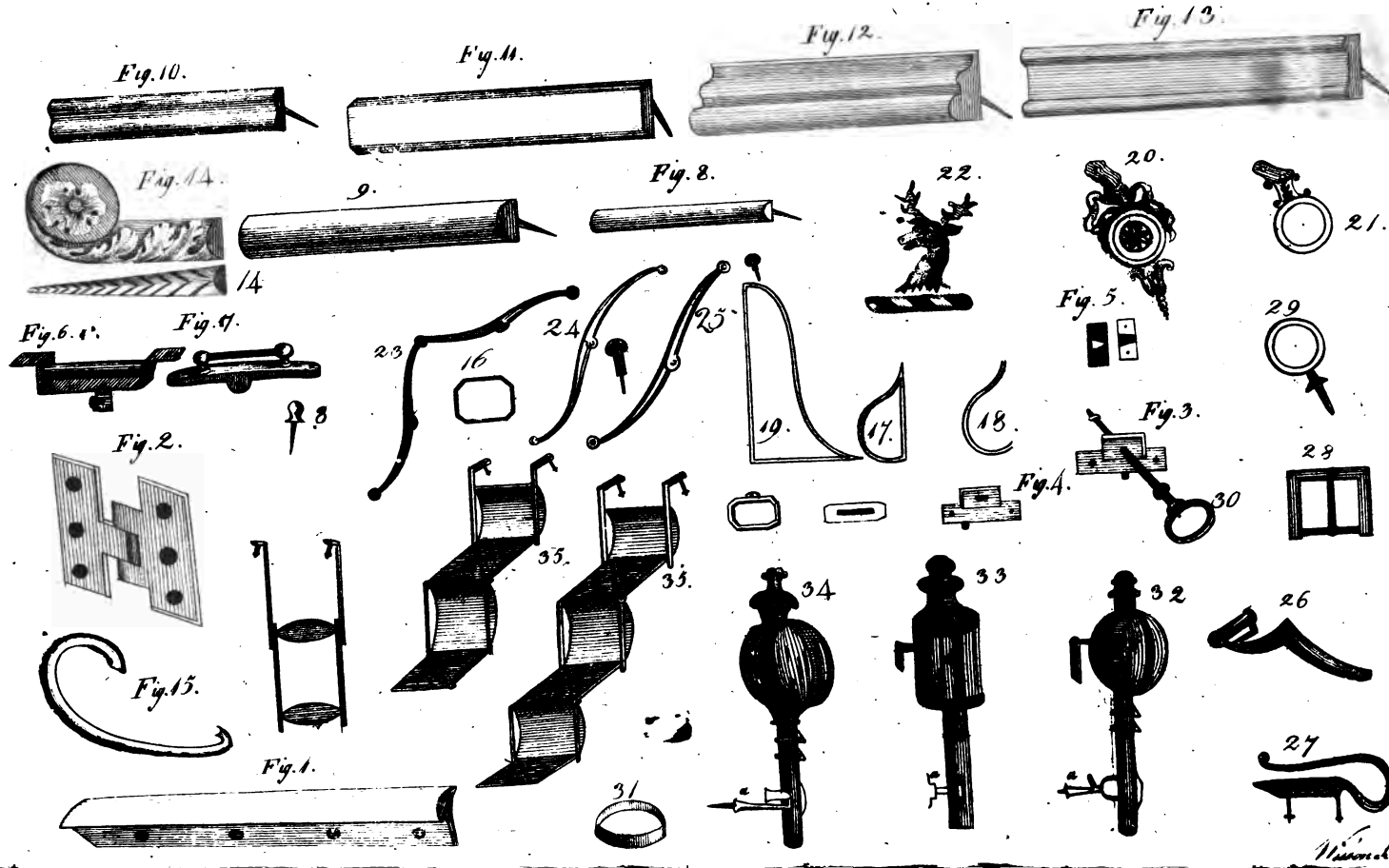


Fig. 10.
Fig. 11.
Fig. 12.
Fig. 13.
Fig. 14.
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Fig. 6.
Fig. 7.
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Fig. 5.
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Fig. 2.
Fig. 3.
Fig. 4.
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Fig. 15.
Fig. 1.
31
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CHAP. XIII.

LAMPS.

PLATE XVIII.

Lamps were originally used as necessary conveniences to a carriage, but are now more principally used for ornament, for which they are as well calculated as any article throughout. They are of various patterns, and are distinguished by the name of the globe, the Italian, or oval lamp: the oval lamp is now the most general in use, and, like the globe, it casts the light entirely forward: the Italian lamp does not reflect so strong a light forward, but gives a light all round them, which is convenient to passengers in the carriage. There have been some few lamps used of the patent principle for burning oil, but the smoke they create renders their use objectionable; the hard spermaceti candle is the best to burn. The lamps are frequently smothered, or the lights go out, for want of sufficient openings at the bottom and top, to receive the air, and to discharge the smoke; the lamps are of three kinds, three sizes, and are three ways finished, either plain or ornamented, with plating or glass

reflectors; the large size is used to the coach, and in the centre if three are used; the middle size to the chariot; the small to the gig or phaeton: they are fixed by iron-work, which is differently formed, according as the lamps are required to be set; and the barrels are supported by small iron forks or props, and are made secure with a leather strap and buckle. The following representations are the three lamps now mostly in use, and are called the globe, the Italian, and the oval pattern lamps.

Fig. 32, The globe lamp, made round in the body, and has one large concave glass in front.

Fig. 33, The Italian lamp, made long, but round in the body, and has the glass in three divisions.

Fig. 34, The oval lamp, has a glass in front, a little convexed, and two bent small glasses on the sides.

These lamps are all manufactured of tin, on one principle, with a long case or barrel for the candle, having in the barrel a spiral wire spring, which forces the candle to rise as it consumes. The barrel is fixed in a socket of the lamp from which it is drawn, and also opens at top, for the candle to be placed in, and is fastened by two rings, or ferrels, with a stop at the extent of turning, and has a small staple for the strap

strap to be placed through, and is kept steady by forks, or props, which screw on the pillar. The heads are of various patterns, with fret, or open work, for the smoke to discharge at. The lamps remain fixed; but every time candles are used, the barrels are obliged to be taken asunder, and replaced with some trouble, and the probability of damaging or rubbing off the paint; to remedy which, the following simple plan is here submitted as an improvement, without making an increase in the expence: Let the barrel remain fixed to the lamp, and the bottom of the barrel to open on a hinge, and fasten by a spring ketch on the opposite side, and so place the candle up from the bottom, instead of taking off the barrel to put it in at the top; which is easily done, without the least trouble or injury.

PRICE OF LAMPS.

The plating used to lamps is of rolled plated metal, which in general is of the worst sort; the reason is, the prices paid to the makers for them are so low as to make it impossible to afford a sufficient good article; but the prices here stated allow a sufficiency for the best quality of plating; the deductions to be made for the inferior plating

are, two shillings for the middling, and four shillings for the inferior sort, for each pair.

GLOBE PATTERN. FIG. 32.

	Large. £. s. d.	Middle. £. s.	Small. £. s. d.
A pair of plain, with common backs, - - - -	1 18 0	1 15	1 12 0
A pair of ditto, with glass reflector backs, - - - -	2 2 0	1 18	1 8 0
A pair with glass backs, and plated heads and barrels, -	2 10 0	2 6	1 16 6

ITALIAN LAMPS. FIG. 33.

A pair of plain Italian flat sides,	1 15 0	1 12	1 10 0
A pair of ditto with round sides,	2 4 0	2 0	1 15 0
A pair of ditto, with plated heads and barrels, - - - -	2 12 0	2 8	2 2 0

NEW PATTERN OVAL. FIG. 34.

A pair of plain ovals, but with glass backs, - - - -	2 6 0	2 2	1 18 0
A pair of ditto, plated, -	2 10 0	2 8	2 6 0
A pair of ditto, with extra large plated heads, - - - -	3 3 0	2 16	2 10 0

The props, staples and straps, *a a a*, and also the painting, being necessary for all lamps, the above statements include them.

The mounting the lamps with brass or coloured metal, is the same expence as mounting with silver plated metal.

REFLEC-

REFLECTORS FOR LAMPS.

The common reflector is only a silvered back burnished, which will not admit of cleaning otherwise than with a little whitening and a soft cloth tenderly used.

The general sort of reflector now in use, is a thin reflecting glass, cut in small diamonds or stars, and stuck on the back: the smoke from this is easily wiped off, and it always looks well.

The best and strongest reflectors are those new invented convex glasses which are put before the light at a proper distance. Those glasses answer best for the front; being of a strong substance, they are not so easily broken as the others, and they magnify the light to a great advantage, but are an addition in the expence of rl. 6s. for each pair.

LIGHTS FOR BURNING IN LAMPS.

The advantage of a clear strong light is necessary to every carriage, in particular for those travelling on bad roads: the utility of reflectors has been long experienced; but one very material thing has never yet been attended to, viz. the light for burning in lamps; oil has proved objectionable by the smoke it creates, and being also

also filthy to use about a carriage: candle is what is always used, and is certainly best, being clean and easily applied; but hitherto the candle used has been made of an inferior composition, with wicks disproportioned to the size of the candle, which soon gutters away, or gives but a small glimmering light, that would be scarcely visible but for the reflectors, which would reflect with double advantage, if double the strength of light was applied; for which purpose the Author has procured a candle made of a superior composition, with a burner, which gives a light more clear and strong than any yet ever used for lamps, sold only at his Office, where the experiment may be tried; and the price of it being but little above that of the common sort, it must have the preference.

CHAP. XIV.

STEPS.

Steps being of various patterns, the expence both for the iron-work and trimming is also different, which makes it necessary to treat of them separately from either of those subjects. Great exactness is here required in the making, so that

that one joint may not bear a greater pressure than another, as the twist thereof would occasion it to break; particular good iron is here essential.

SECT. I.

INSIDE FOLDING STEPS.

Fig. 35. The double and treble steps used to close carriages, and hung on the bottom sides, are made convenient to fold in a small compass, and adapted to the height of the body; they are lined at the back and under part of the treads with good leather, of which they take a considerable quantity; the treads are all covered with carpet the same as the bottom of the body, and the fore-side lined and trimmed with cloth and lace the same as the inside lining.

SECT. 2.

STEP-PLATES AND STOPS.

a, The step-plate, fixed in the bottom side to preserve the timber from injury by the strain.

b, The step-stop, which bolts on the bottom of the bottom side, and receives the pressure of the step when down.

SECT.

SECT. 3.

OUTSIDE CHAISE STEPS.

Fig. 36. The double steps used and fixed to the outside of a body for a Doctor's, or a two wheeled carriage. They are of simple designs, and bear no comparison with the other, having only one folding joint in them, being always fixed on the outside to prevent trouble. The treads are, or ought always to be, covered with leather, to prevent accident by slipping off; their forms are various, sometimes of a bell, an oval, or square shape, as fancy may direct.

SECT. 4.

HANGING STEPS.

To high phaetons there are many steps devised besides the fixed treads to the carriage, made so as to be used occasionally, for the more easy accommodation of Ladies; they are mostly made so as to be hooked on to an upper tread when used; and when out of use, are placed in a case, either at the bottom of the body, or the under part of the carriage.

PRICE

PRICE of STEPS.

Single steps to carriages compose a part of the necessary iron-work, and is included in the statements in pages 82 and 96; but as double steps are frequently used to chaise or curricle carriages, the value of both are here separately stated, that the difference may be known.

Double and treble folding-steps for coach and chariot bodies, are only here stated, that either pattern may be added to the former statement of bodies, and save the trouble of subtracting the difference of expence of one pattern from another.

	Single. £. s. d.	Double. £. s. d.	Treble. £. s. d.
A pair of inside folding steps for coaches, &c. - - -	- - -	3 0 0	5 0 0
A pair of outside steps for chaises, &c. - - - -	1 1 0	1 15 0	- - -
A hanging step for a phaeton -	1 1 0	2 2 0	3 3 0

The cloth and lace with which the folding steps are trimmed, are both included in the price of linings, being a part of that article; but that the complete price of steps may be known separate, add to the above statements of inside folding steps, five shillings for the trimmings to each pair.

CHAP. XV.

PAINTING, VARNISHING, &c.

Painting is not only necessary to preserve, but also to ornament the carriage, which it does more effectually than any thing else bestowed on it; and every attention of a proprietor ought to be to select such patterns of colours as shall best suit for appearance and durability. The choice of colour depends entirely on fancy; but those should be preferred that are the most permanent, or that are the least likely to be injured by the weather; an agreeable contrast in the colours of the body, the carriage, and stripes, with which they are ornamented, require some judgment, to give a proper effect to the painting.

SECT. I.

GROUND COLOURS.

The ground colours are the bodies of paint with which the carriage is covered previous to varnishing; the pannels of the body are first prepared with a composition laid several times on with

with a brush, which fills the grain of the wood, and hardens so as to bear rubbing down to a fine surface with pumice stone, previous to painting; the frame work is only covered with as many coats of paint as will fill up the grain or pores of the timber. The preferable colours for wear are those which are extracted from minerals, such as the vermilion reds, yellows, whites, &c.; the most objectionable colours are the greens, in particular the verdigrease green, though the richest in use while in preservation; the very light colours are the least likely to stand, or be well painted, as the varnish is of itself of a darkish hue, and is apt to stain, or cloud on them; the darker the colours are, the fuller the varnish may be, and the stronger the reflection is from it; besides, a dark colour shews the plated furniture to the greatest advantage.

SECT. 2.

PICKING OUT.

The picking out to a carriage is the ornamenting the ground with various contrasted colours, which is to lighten the appearance, and shew the

mouldings to an advantage. There are various methods of picking out, according to fancy; but the usual method is to paint the mouldings with one full colour, different from the ground, which is called full-beading; another is to full-bead and line the sides or squares with light strokes, called lining the beads; another is to full-bead, line and pannel, which is to paint the beads or mouldings as before, and draw fine lines along the flat surfaces of the timbers, in imitation of, and is called, pannelling, and also ornamenting with stars or scrolls in the broad spaces.

SECT. 3.

VARNISHING.

Varnish is of material use, both for preserving the colours, and shewing their appearance to advantage, and may be so executed as to reflect like a mirror; it is made up of dissolved gums in oil and spirits, and with it the painting is covered. The durability of the varnish depends much on care; but frequently fails, in consequence of being too new when used, or made of an inferior composition; the higher the varnish is on the pannels,

pannels, the better they look, but are the less likely to stand: the dark varnish in general has the strongest body, but cannot be used to cover light painting, as it so much discolours it; the light varnish is in general so thin as scarcely to shew any lustre, without a considerable quantity, which is difficult to lay on without clouding; some varnish, soon after use, loses its lustre, and looks as dull as if no varnish at all had been used; others crack all over, but principally on those parts which are most exposed to the sun; this circumstance is owing to the composition; that is, whether the gums, oils, or spirits, most preponderate; on the quality of the varnish, the permanency of the paint principally depends.

There are three methods of varnishing the pannels, viz. the common, the polished, and high varnish; the common varnishing is what is done to all, and is included in the charge of painting; the polished is an additional quantity of three or four coats of varnish extra, which, after being properly hardened, is smoothed and polished with fine powder and hard rubbing; the high varnish is a still greater number of coats of the best varnish, which is polished to a greater height, so as to give it a very high lustre, almost equal to a looking glass.

SECT. 4.

SECT. 4.

JAPANNING.

The japanning is a covering the leathered or upper posts of the body and boots, &c. of a carriage, with a fine black, in the manner of painting; it is a composition of gums, spirits and spaltams, of a thin body, resembling varnish; it is a strong contrast to the other colours, and answers for both colours and varnish, and may be polished equal to it.

SECT. 5.

HERALD AND ORNAMENT PAINTING.

It is usual, for the distinction of families, to paint on the pannels, the arms and crests they are entitled to bear, from the Office of Heraldry.

The arms of private families are borne in plain shields, but those of the nobility have supporters and coronets of various patterns. A minute description of the rules of Herald-painting would be unnecessary here; a reference to EDMONSON's Book of Heraldry will give every information necessary on that subject. Plate xix, and the description

scription thereof, will give such information as is commonly required.

The ornament painting is merely to beautify the carriage, which it does materially, when it is well executed; but when otherwise, it hurts the appearance of it. This depends on the capacity of the artist: the pannels had better be entirely plain, than daubed as many of them are, in imitation of painting; and in particular that of Heraldry, which requires some merit to execute properly.

PLATE XIX.

Fig. 1, The arms of a bachelor in shield, with the crest on a wreath.

Fig. 2, The arms of a maiden lady, in the proper shaped lozenge they should be borne.

Fig. 3, The arms of the same, empalled with those of the gentleman's, shewing how they are borne when united by marriage.

Fig. 4, The manner in which the lady's arms are to be borne, if the lady is an heiress, which is in a separate shield, within the centre of the husband's, called a scutcheon of pretence.

Fig. 5, The form of the shield, called a widow's lozenge, in which either of the arms are to be placed if the husband dies.

Fig.

Fig. 6, Two ovals, in which the arms are separately placed, but not if the lady is an heiress; the arms must then be borne in a shield, or oval, with the lady's arms in the middle: there is no rule for any form of shield; whether round, oval or cornered, makes no difference for a gentleman's arms; but for a lady's, the form of a lozenge is the rule, except when married and empalled.

Fig. 7, The scroll ornament, or a foliage mantle, which surrounds the arms or crest, instead of the curtain mantles. Within the arms is the bloody hand which distinguishes a baronet.

Fig. 8, The mantle, of which there are various shapes, is introduced only as an ornament to contain the arms or crest; it is a very ancient fashion, continually fluctuating in form and size, but is now reviving of an increased size to what it has been.

Fig. 9, A cypher and crest, which, either together or separate, are often painted on a carriage instead of the arms, or on the side pannels or styles, when the arms is on the door and ends; the crest must be in its proper colour, but the cypher should be a contrast from the ground colour.

Fig. 10, A border of a neat pattern, which is spread wide, and fills the space allotted to it with

Fig 1.

Fig 2.

Fig 3.

Fig 4.

Fig 5.

Fig 6.

Fig 7.

Fig 8.

Fig 9.

Fig 10.

Fig 11.

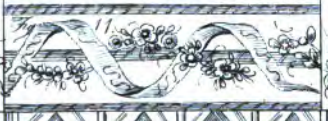


Fig 12.

with a good effect; this is not crowded with work, and may be considered one of the plainest.

Fig. 11, A border more enriched than the other, having also a fillet on each side; this may be considered of the middling kind.

Fig. 12, A border filled with swag of flowers, having the crest painted at about the distance of every six inches; this may be considered of the superior kind.

Fig. 13, The striping, which is sometimes painted on the pannels to ornament them.

Fig. 14, The striping and zig-zag work, which is also sometimes painted on the pannels.

Fig. 15, The striping richly ornamented with husk between the striping: either pattern may be painted perpendicular or horizontal, as fancy may direct; the expence is the same either way; the closeness of the stripes and ornaments proportions the price, but should be so close that the ground colour be half-covered with pencil work.

PRICES of PAINTING.

With the painting of a carriage, the varnishing and japanning are included in the price, though frequently divided by some, to sanction a greater

 charge.

charge. What is properly an additional expence, is the ornament and heraldry work, as also the polished or high varnish and picking out.

It is frequently necessary to varnish or japan, separate from the painting, in consequence of a failure; but this is particularly mentioned under the subject of repairs.

The ornament painting cannot be reduced to any determinate price; being of various fanciful designs, it entirely depends on the quantity and merit of the work. The arms and crest, also the mantles which contain them, are in general tolerably regular in their prices, having nearly the the same work in one pattern as another; but when mantles are much furled, or arms much quartered, an increase of expence must be expected; as also when above the ordinary size, which is from two inches to three and a half for the arms, and from four to six for the mantles; but the prices for the generality of painting may be nearly understood from the representation in the plate, describing each pattern as of three sizes, and proportioning the prices at so much per foot long; the striping to be charged by the foot square.

PRICES OF PAINTING BODIES AND CARRIAGES.

BODIES.	Coach.			Chariot.			Large Phaeton.			Middle or small Phaeton.			Curricle.			Whiskeys. Half-pannel.			Cane.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Painted and plain varnishing,	3	0	0	2	10	0	2	0	0	1	18	0	1	15	0	1	10	0	0	18	0
Picking out the mouldings,	0	10	6	0	10	6	0	7	6	0	7	6	0	7	6	0	7	6	0	7	6
Japanning the roof and quarters, sword-case, doors of phaetons, &c.	2	10	0	2	0	0	0	10	6	0	10	6	0	10	6	0	16	6	0	10	6
Polishing the pannels,	2	10	0	2	0	0	1	5	0	1	5	0	1	5	0	1	1	0			
High varnishing ditto,	5	15	6	4	4	0	3	3	0	3	3	0	3	3	0	2	10	0			
CARRIAGES.																					
Plain painting and japanning the boots and budgets,	2	2	0	2	2	0	1	15	0	1	11	6	1	7	6	1	1	0	1	1	0
Picking out the mouldings, one colour,	1	1	0	1	0	0	0	18	0	0	15	0	0	12	0	0	10	0	0	10	0
Ditto, two colours, lining the mouldings with stripes,	1	15	0	1	15	0	1	11	6	1	10	0	1	4	0	0	18	0	0	18	0
Ditto, three colours, or pannelling and much ornamented with stripes,	2	10	0	2	10	0	2	5	0	2	0	0	1	10	0	1	5	0	1	5	0
Oil varnishing the carriage after finished with paint,	0	15	0	0	15	0	0	15	0	0	15	0	0	10	6	0	10	0	0	10	0

This statement will answer for the new painting of old bodies and carriages, by deducting one-fourth from the value of the first sum for plain painting and japanning—for example;

A new coach body painting is - - -	£. 3 0 0	An old one	2 5 0
Ditto japanning, -	2 10 0	ditto	1 17 6
Carriage painting, -	2 2 0	ditto	1 11 6

All the other charges are the same.

PRICES OF ORNAMENT AND HERALD PAINTING.

	Large. L. s. d.	Middle. L. s. d.	Small. L. s. d.
A single coat of arms to either pattern in the Plate - - -	0 10 0	0 7 0	0 5 0
A pair of supporters, - -	2 2 0	1 11 6	1 1 0
A crest, - - - -	0 5 0	0 4 0	0 3 0
A ditto with a Duke's, Earl's, or Baron's coronet, - -	0 10 0	0 8 0	0 6 0
A cypher of one letter, - -	0 3 0	0 2 6	0 2 0
A ditto of two letters, - -	0 4 6	0 3 6	0 2 6
A ditto of three letters, - -	0 5 0	0 4 0	0 3 0
A mantle of the usual pattern, -	0 10 6	0 7 6	0 5 0
A ditto much furled, - -	0 15 0	0 12 0	0 10 0

Inch. wide.	Rich.	Middle.	Plain.
Borders per foot long, 5	0 10 0	0 7 6	0 5 0
4	0 7 6	0 6 0	0 4 0
3	0 6 0	0 4 6	0 3 6
2	0 4 6	0 3 6	0 2 6
1½	0 3 6	0 2 6	0 1 6
Fillets, ditto, - 1	0 2 6	0 1 9	0 1 0
¾	0 1 9	0 1 0	0 0 9
½	0 1 0	0 0 9	0 0 6
Striping on pannels per ft. square,	0 10 0	0 7 6	0 5 0

CHAP.

CHAP. XVI.

CHAISE-HEADS, WINGS, KNEE-BOOTS, AND DASHING LEATHERS.

Those are conveniences not all regularly used with every kind of carriage; but there are no phaetons or chaises finished without one or the other, which makes it necessary to describe them separately, that the proprietor of a carriage may choose either, as is best suited to his inclination.

SECT. I.

CHAISE-HEADS.

PLATE XX.

Heads to phaetons or chaises, &c. are found great conveniences for sheltering from the sun, wind, or rain, and, excepting to very light carriages, ought not to be dispensed with. The principal objections to them are, the additional weight of themselves, besides impeding the draught, if opposite to the wind; but one great advantage in them is the ease they can be removed with, according to the expectation of the weather. They are of two different forms, and are

are furnished with different conveniences; but are all made as is described in Plate v. with light wooden ribs, which are afterwards covered with a grained leather, and lined with woollen, serge, or broad cloth, the same as the body is lined with. The cloth is the preferable lining, though serge is often substituted in its place.

Fig. 1, Represents a round or waggon-head, made on an iron frame *a a*, by which means it is easily removed, when the wings are to be used, which are secured by the same fixtures *b b* as the head is. The inside is furnished with two curtains *e e*; the narrowest is hung on the driving side, for freedom to the driver; the widest is to shelter the other passengers.

Fig. 2, Represents a square head, with conveniences on the inside at *c c* to set and reset the head, without the trouble of reaching over to put up or down the joints, from the outside, as usual; the seams of the leather are sewed in welts, and round the front *d d* a broad stripe of leather, welted on the edge, is nailed, which shelters the inside, and is called a vallent.

SECT.

Plate XX.

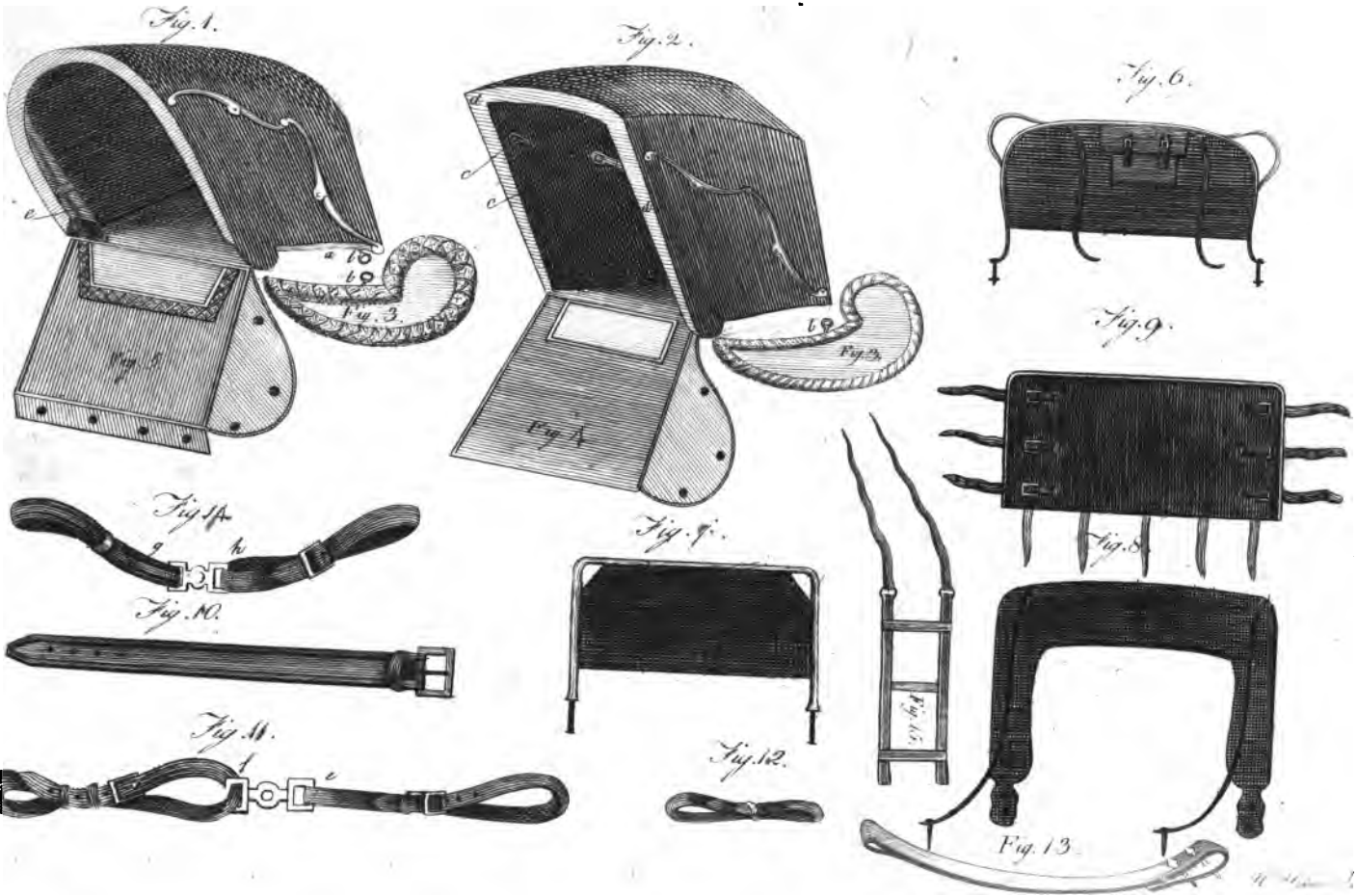


Fig. 1.
Fig. 2.
Fig. 6.
Fig. 3.
Fig. 5.
Fig. 4.
Fig. 9.
Fig. 10.
Fig. 7.
Fig. 8.
Fig. 11.
Fig. 12.
Fig. 13.

SECT. 2.

WINGS

Are fixed to the sides or elbows of the chaise bodies, when a head is not used; their use is to form a rest for the arm, and shelter the passenger from the dirt which splashes from the wheels; they are light iron frames, covered with leather, and lined with cloth and lace, to answer the lining, and are mostly ornamented round the outsides with a plated frame; to slight cheap built carriages, the wings are sometimes made of wood only.

Fig. 3, Are two wings, with different trimmings; they are made to fix at the points in square staples, and are screwed on the elbow-rails with ring screws.

SECT. 3.

KNEE-BOOTS OR APRONS

Are coverings for the knees of the passengers in a chaise or phaeton; they are made of a fine grain leather, the same as the head, and lined with linen or light woollen serge, with a flap made of the same materials as the lining, which turns over and ornaments the top; they are made to extend

extend from the foot-board to which they are fixed, to the top of the elbow in front, with cheeks sewed and welted on the sides, and are fastened to buttons fixed on purpose for them.

At the top of some knee-boots, an iron-jointed rod is sewed in the leather, which fixes in spring sockets on the elbow rail; the particular use of the rods is to support the knee-boot straight and free from the knee of the passenger, and to preserve them from the chance of falling out by the violence of any jolt the carriage may meet with.

Fig. 4, A knee-boot made to fix on the foot-board, and to hitch on at the top with a ring or leather loop to a button; the rings are most convenient.

Fig. 5, A knee-boot, which takes off occasionally, being only hitched on to buttons fixed in the footboard, having also an iron frame at the top for safety.

SECT. 4.

DASHING OR SPLASHING LEATHERS

Are conveniences made to fix on the fore part of a carriage, to prevent the dirt splashing against the pannels or passenger, and also to hide the posteriors of the horse.

They

They are iron frames of various forms, covered with leather, which is either dressed in oil, or japanned; they are ornamental conveniences now very generally used, in particular to curricles; the top ends are formed in loops, for the hands to be placed in, to assist the person while mounting.

Fig. 6, A dashing leather for a curricle, having loops projecting out for the hand to assist getting up by, and stays on the frame which fix on to the back-bar, and keep it steady; on the inside is a leather pocket, for the purpose of carrying lince, pins, &c.

Fig. 7, A dashing leather for a one horse chaise carriage, having no back-stay, or iron-loops for the hand, but the leather is cut out at the corners of the frame to answer the same purpose; those are made much lighter than the others.

Fig. 8, A dashing-leather for a post-chaise carriage, which is made to fill the space between the springs and the boot, which it is formed to the shape of, and encompasses, having at the back long stays, which help to support it; when the common coach-box is taken off, those are made to fix in its place.

Fig. 9, A dashing leather for the body of a post-chaise; this is not an entire frame, but only top and sides, round which the leather is sewed, and buckles to the bottom of the body; it is

fixed on the fore main braces, with either bolts or buckles: this entirely preserves the front pannel from dirt, when travelling on wet roads.

PRICE OF HEADS, WINGS, KNEE-BOOTS, AND DASHING LEATHERS.

With those conveniences every thing is included in the price, except the plating; so that the difference of any pattern may easily be known; and the separate amount of either, added to the former statements, will give the value of carriages when completed with either of them.

HEADS.

	£.	s.	d.
A plain fixed head lined with cloth, -	10	0	0
A plain fixed round ditto, ditto, - -	12	0	0
The joints to turn with inside wenches, -	1	10	0
A frame to take off the head occasionally, -	1	6	0
A pair of cloth curtains bound with narrow lace,	0	18	0
A pair of oil-skin ditto lined with linen, -	0	16	0
A small back light without a plated frame, -	0	6	0

WINGS.

	Large. £.	s.	d.	Middle. £.	s.	d.	Small. £.	s.	d.
A pair of iron framed wings trimmed with two inch lace, -	1	15	0	1	12	0	1	10	0

KNEE

KNEE BOOTS.

	Large.			Middle.			Small.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.
A knee boot fixed on the foot-board, - - - -	2	4	0	2	0	0	1	18	0
A ditto to take off occasionally,	2	8	0	2	6	0	2	2	0
An iron jointed frame, -	0	18	0	0	17	0	0	16	0

Silvered buttons, with which they are fastened, are included in the above price; the lace for the falls considered of two inch width.

DASHING LEATHERS.

A curricle dashing leather with stays, -	£.	2	10	0
A light chaise ditto, no stays, - -		1	15	0
A post-chaise ditto, with stays, - -		3	0	0
A post-chaise or coach body ditto with buckles,		2	12	6
A pocket for either, - - - -		0	5	0

CHAP. XVII.

PLATE XX.

BRACES, POLE-PIECES, &c.

Are the leather straps, of various sizes, made up with buckles, and are what the body is hung and checked by.

SECT. I.

FIG. 10. MAIN BRACES,

Are what the body hangs by; the size and thickness ought to be proportioned to the weight they are intended to carry: the breadth for a coach is two inches and three quarters; for a chariot, two inches and a half; a phaeton, two inches and a quarter; a chaise, or other light body, two inches: the stripes are fastened together by four rows of sewings, and are made up with large plated buckles.

SECT. 2.

FIG. 11. COLLAR BRACES,

Are those that go round the perch or crane, and are buckled through a loop or ring, fixed to the bottom of the body, to check the motion sideways, and to confine it from striking against the wheels. Those for heavy bodies are of a double thickness, but single stripes to light bodies, such as phaetons or gigs, are sufficient. Some are fixed to the perch-loop as *e*, while others run through a loop as *f*, to take off occasionally. The breadth is in general an inch and three quarters.

SECT.

SECT. 3.

FIG. 12. CHECK BRACES,

Are for the purpose of checking the motion endways, placed at the four angles of the body, and are always of single stripes of leather; on phaeton or chaise bodies, they sometimes cross the angles for ornament only. The usual size is an inch and a half broad, and three feet long.

SECT. 4.

FIG. 13. SAFE BRACES,

Are seldom used; their purpose is to receive the body, if by accident the springs, the loops or shackles, fail. They are fixed to irons, which are placed to the four angles of the carriage, in the same manner as the springs are, and hang loose under the body; they are very necessary for travelling carriages; the usual size is half an inch thick, and two inches and a quarter broad, and from ten to eleven feet long.

SECT. 5.

FIG. 14. POLE PIECES,

Are the straps which couple the horses to the pole, and are also regulated by the size and weight

weight of the carriage, and are from one inch and three quarters to two inches and a quarter broad, and thick in proportion; they are sometimes fixed to the pole-end, and are thus called English pole-pieces, *g*; sometimes they run through a loop at the pole end, to take off occasionally, and are called French pole pieces, *h*, which are a preferable sort.

SECT. 6.

FIG. 15. CRADLES,

Are strong leather platforms, on which the coachman's seat is placed, fixed to the four angles of the seat irons by means of loops and straps, or buckles to let down or take up at pleasure, for the purpose of flattening or hollowing the seat.

PRICE OF BRACES.

It is frequently a rule to charge one general price for coach and another for chariot braces, including the buckles; but the most perfect method is to charge for the length of each per foot, and to add the price of buckles to the amount: there being many different sizes of straps for other uses besides braces, the value of any may be collected

lected from this rule; there is also a difference to be made if the braces are of a different thickness, for strong, light, or common business; the middle size is what is mostly used.

Inches wide.	2¾	2½	2¼	2	1¾	1½
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Strong for travelling heavy bodies, -	4 6	4 0	3 6	3 0	2 6	2 0
Common size, -	4 0	3 6	3 0	2 6	2 0	1 6
Lights for phaetons,	3 6	2 6	2 6	2 0	1 6	1 0
Single stripes of leather, - -	2 0	1 9	1 6	1 3	1 0	0 9

The measure to be taken from the bridge of the buckle to the point of the strap.

The lengths of coach and chariot braces are nearly the same with each other, which in general measure about four feet; so that, including the buckles with the braces, the usual prices charged for common braces are,

	Coach.			Chariot.		
	L.	s.	d.	L.	s.	d.
Main braces with plated buckles, the set,	4	4	0	3	13	6
Check braces with ditto, the set, -	0	10	0	0	10	0
A pair of safe braces with fixtures, -	4	4	0	3	13	6
Cross ditto, the pair, - - -	0	7	6	0	7	6
Single collar braces with iron buckles, the pair, - - - - -	0	12	0	0	12	0
Double ditto, ditto, - - -	0	15	0	0	15	0
French pole pieces with polished buckles, the pair, - - - - -	1	6	0	1	4	0
English ditto, - - - -	1	0	0	0	18	0
Set of point straps and plated buckles for main braces, - - - -	0	6	0	0	6	0

Price of Cradle, see page 146.

CHAP.

CHAP. XVIII.

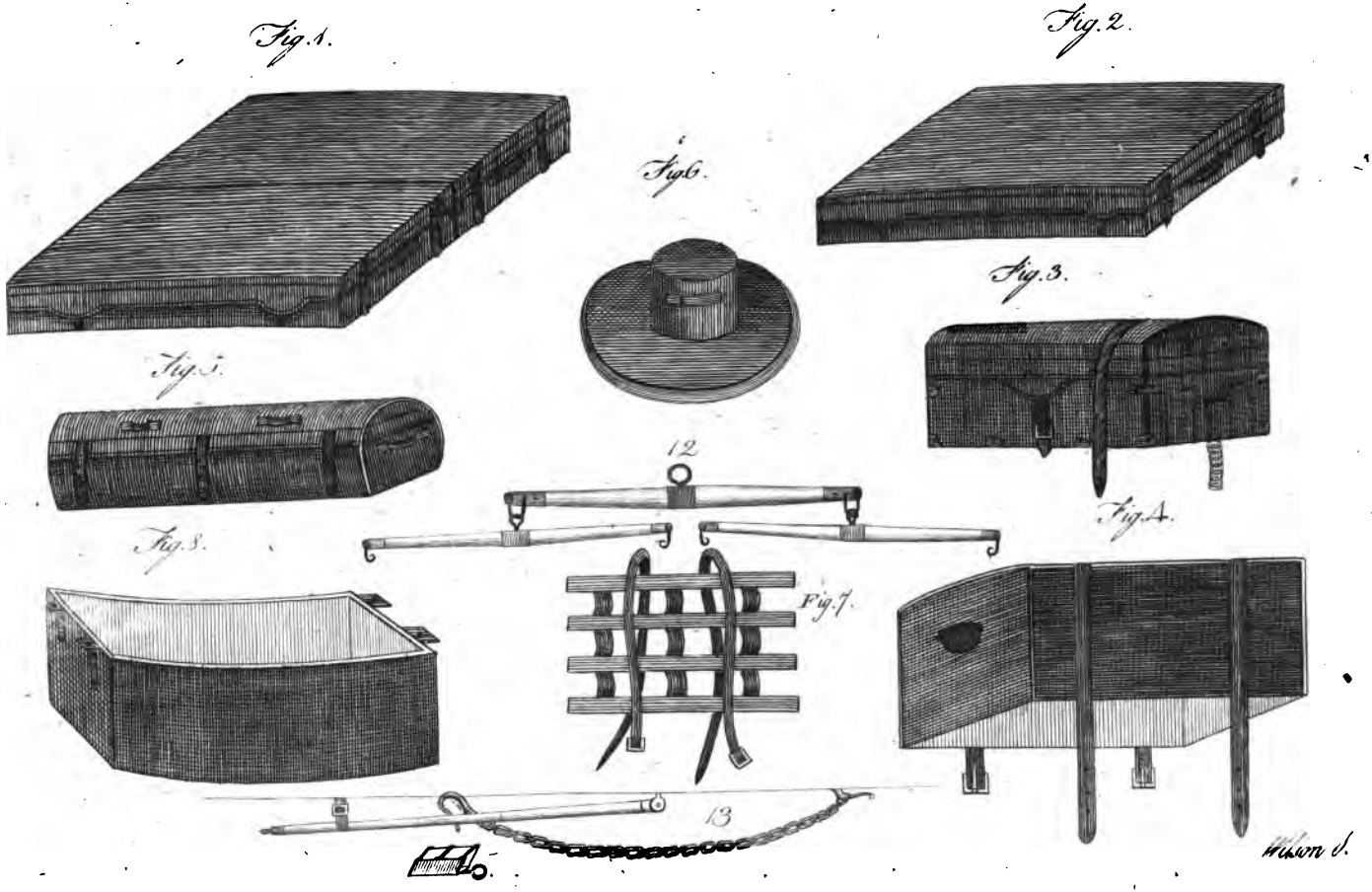
PLATE XXI.

TRAVELLING CONVENIENCES.

There are many conveniences used with carriages, but more especially with those for travelling, that are not manufactured, but only sold and fitted by the coachmakers; the principal of which are, trunks, imperials, cap and hat boxes of various descriptions; those things are usually made of boards, covered with leather, of two or three sorts, in which there is a material difference: the best leather is the ox hide, called neats leather; but horse hides are most frequently used, and are sufficiently good for the purpose: but an inferior leather is often substituted, which is not of one-fourth the value of the horse leather, though often imposed for it; this is sheeps skins, commonly called Bazil leather, which is of so slender a texture, that it tears almost like paper. For many light purposes, sheep-skin covered trunks will answer in place of a better leather, and a material saving of expence will be made.

SECT.

Plate XXI



SECT. I.

FIG. 3. TRUNKS.

Trunks used for carriages are required to be made particularly strong, and are mostly strengthened at the corners and joints with thin iron plates; the leather which covers them also adds to the strength; they are usually much filled with brass nailings, which is done to ornament and preserve the leather from injury by rubbing; in particular, if covered with Bazil leather: they are lined with paper or linen; the linen is to be preferred.

SECT. 2.

FIG. 7. INSIDE STRAPS AND LATHS,

Are conveniences to confine what the trunk contains from shifting about: they are made with four or five laths, covered with cloth or paper, which are nailed at a small distance to three pieces of girth web, and lye at the top of the parcels within the trunk; on the bottom of the trunk the straps are nailed, which buckle round the laths, and keep all tight.

SECT. 3.

FIG. 4. TRUNK COVERS.

These are made to fit the outside of the trunks, which they cover and preserve while in use; they are only made to cover those trunks which are exposed to the weather, and are usually made of thick painted cloth, with holes at the sides for the handles of the trunk to be got at.

SECT. 4.

FIG. 9 AND 10. TRUNK STRAPS AND BELTS,

Are to confine and secure the trunk from shifting, or being stolen; the straps are made of common thick leather of about an inch and a half broad, with an iron roller buckle. The chain belt is a contrivance to fix round the trunk, which it locks to the platform; it is made of thin sheet iron, jointed by wire loops, and covered with thin leather, and is secured by a padlock.

SECT. 5.

FIG. 1 AND 2. IMPERIALS.

These are large flat cases, made to the form of the whole, or part, of the roof of the body; they are

are great conveniences to carry light articles safe, and mostly designed for apparel: they are made of light thin deal boards, covered with neats leather, and lined with linen; the bottom is lined with baize, and stuffed with soft tow, to prevent injuring the roof by rubbing: if intended to cover the whole of the roof, they are most convenient to remove, if divided into two parts; but, as the half is often sufficient for use, it saves unnecessary luggage. Of those things there is also a difference in the materials, and method of making. They are fixed on the roof by means of straps and staples, which are included with the imperials, in the prices stated.

SECT. 6.

FIG. 5. CAP-BOX.

A cap-box is a case convenient for carrying Ladies' head-dresses safe; they are of a roundish form, and are mostly hung on the back of the body, resembling a sword-case; the lid is fastened sometimes in the manner of a portmanteau, or with a single lock; they are fixed on the back by means of thumb-screws and key-staples; but, like the trunks, they are made of different materials, according to the price.

SECT. 7.

FIG. 6. HAT-BOXES.

A hat-box is a convenience for carrying hats, made of stout leather, in the exact form of a hat, opens at the bottom, and is secured by a padlock; it is usually fastened to the roof, or front budget of the carriage, with straps.

SECT. 8.

FIG. 8. WELLS.

A well is a convenience used in travelling carriages for stowage; it is a strong wooden case fixed on the bottom of the body with iron-work, so as to be occasionally taken off, if desired; the access to it is from the inside of the body, having a door made from the bottom under the carpet, and secured by a lock: if wells are made to bodies hanging on perch carriages, there must be two of them; one on each side of the body, with the perch between them; they are lined with linen or baize within, but painted black on the outside.

SECT.

SECT. 9.

FIG. 12. SPLINTERS, OR SPLINTER BARS,

Are the short bars which are hung to a hook at the end of a pole, when leading horses are required: they are three in number; the centre one hooks on the pole end, the other two hook on the ends of it: on each end of the two outsplinters, the traces of the harness are fixed to small iron-work; sometimes the traces of the leading harness are fixed to the collars of the wheel harness, which method looks best; but the draught is not so equal as when drawn from splinters: a spare bar or two are always necessary in case of one breaking by a sudden pull of the horse.

SECT. 9.

FIG. 13. DRAG CHAINS AND STAFF,

Are necessary to every travelling carriage; the chain is to lock the wheels, and to prevent the velocity of the carriage being too great when descending a hill; the staff is to check the carriage, and to give rest to the horses when ascending a hill; the chain is fixed to a hook about the middle of the perch or crane, with a hook or shoe

shoe at the end for the wheels; the hook is most handy for use, but the shoe is preferable, as it preserves the iron of the wheel from injury, when dragging on hard strong ground; the chain being covered with leather, prevents it from rattling; the drag-staff is fixed nearer the hind part of the carriage, with jointed iron-work, and is made of strong ash, with iron-ferrels on the ends, and a spike at the bottom, to make it hold secure in the ground; they are both fastened up with straps when out of use.

SECT. 10.

OILED COVERS TO THE BODY,

Are to preserve the paint from the injury of the road-dirt, or boughs, while travelling: oil skin covers are frequently used, and are so made that the doors may open and shut with the cover on; every part of the body, except the windows and bottom, is covered; it is made to fit to the exact form of the body, and looped on to small plated buttons, so as to be taken off occasionally; they are made of common oil linen, lined with a soft baize, and bound with a worsted tape.

SECT.

SECT. II.

SPRINGS CORDING.

The purpose of cording springs is to prevent delay, if by accident a plate should break, and also to strengthen them when required to be heavy loaded: to carriages that have heavy imperials, and much luggage in the body, it is very necessary, which is done by placing a thin piece of ash, or length of cord along the back, and twisting a small but strong cord round, and fastening it well at the top.

SECT. 12.

TOOL BUDGET,

Is a small convenience made to hang by straps under the hind part of a carriage, for the purpose of carrying a few spare bolts, nuts, lince-pins, nails, &c. with the few requisites for the coachman's use; such as a wrench, a hammer, a chissel, a pair of pincers, &c. that, in case of trifling accidents on the road, the defect may be supplied without delay.

PRICES

PRICE OF TRAVELLING REQUISITES.

In the value of those things are included the painting, the straps, buckles, screws, bolts, &c. with which they are fixed.

TRUNKS.	Large. £.	s.	d.	Middle. £.	s.	d.	Small. £.	s.	d.
Best leather, welted or nailed, lined with cloth, - -	3	13	6	3	0	0	2	2	0
Bazil leather, ditto, dittto, lined with paper, - - -	3	0	0	2	10	0	1	15	0
Inside straps and lathis, - -	0	6	0	0	5	0	0	4	0
TRUNK COVERS.									
Trunk covers made of neats leather, - - - - -	2	5	0	1	15	0	1	1	0
Ditto made of oil or painted cloth,	0	10	6	0	7	6	0	5	0

STRAPS AND BELTS.	s.	d.
Straps and belts, 1½ inch wide, iron buckles, at per ft.	1	3
Chain belts, 1½ inch wide, with padlock, at ditto,	1	9

IMPERIALS.	Best. £.	s.	d.	Inferior. £.	s.
A whole imperial for a coach roof, -	10	10	0	9	9
Two ditto for ditto, - - -	11	0	0	10	0
A small one for the middle only, -	5	15	6	5	0
A whole imperial for a roof, - -	7	7	0	6	10
Two ditto for ditto, - - -	7	17	6	7	0
A small one for ditto, - - -	4	10	0	4	0
CAP-BOX.					
A cap-box with fastenings complete, -	3	10	0	3	3
HAT-BOX.					
A hat-box with a padlock and two straps,	2	12	6	2	5

WELLS.	Coach or Chariot.
A large well for the body of a crane-neck carriage,	£. 2 12 6
Two small ditto for the body of a perch carriage,	4 14 6

SPLINTER-BARS.	
A set of splinter-bars complete,	1 5 0
A main, or middle ditto,	0 10 0
An end, or draught bar,	0 7 6

CHAINS AND STAFFS.	
A drag chain with hook,	0 8 0
A drag chain with shoe,	0 15 0
Covering the chain with leather,	0 4 0
A drag staff,	0 10 6

OIL COVERS.	Coach. £. s. d.	Chariot. £. s. d.
An oil cover complete, with plated pins,	5 10 0	4 10 0

SPRINGS CORDING.	Coach or Chariot.
Cording a set of springs,	£. 1 1 0

TOOL BUDGET.	
A coachman's tool budget,	0 10 6

CHAP. XIX.

HANGING OF BODIES.

The bodies of carriages are suspended from the springs by braces; the proper method of executing this, adds much to the elegance of the carriage, and ease of the passengers: in particular in four wheel carriages, where the rule of hanging should be such as to be free from the obstruction of the four wheels when turning, and without hanging too much within the hind wheels; and if on a crane-necked carriage, to observe that a regular distance be preserved between the crane and the bottom of the body, which should be hung so as that the doors be directly perpendicular; but fashion has introduced a method of hanging the bodies of coaches and chariots low behind, which has been followed to an extremity; the advantage of this method is certainly ease to the rider, and to chariots it may be preferred on that account; but to coaches, it not only looks improper, but takes away the advantage of equal accommodation, by making one seat more easy than the other.

To phaetons, gigs, or curricles, there are various methods of hanging, sometimes from braces

at

at both ends, but are mostly from the hind end only, and that in different directions, from the springs to the bottom or middle of the body; the fore end springs are mostly fixed to both body and carriage, and, being united at the ends, depend on their own elasticity for ease; if the hanging will admit a brace, however short, it is preferable; the French horn spring, with a brace round it, agreeable to the present fashion of hanging gigs or curricles, has the advantage for ease.

The placing of phaetons so forward as usual, is to give advantage to the driver over the horses, and to ease the draught, by bringing the weight forward; but does not look so well as if hanging between the wheels.

In all carriages the body should be so hung as that the access to it may be no way obstructed by the wheels, which is frequently the case, in particular, to one horse chaise carriages.

END OF THE FIRST VOLUME.

PLAN

OF THE

REGISTER-OFFICE

FOR

BUYING AND SELLING

CARRIAGES AND HORSES,

BY

WILLIAM FELTON,

COACH-MAKER,

No. 36, LEATHER-LANE, HOLBORN.

PLAN

OF THE

REGISTER-OFFICE

FOR

CARRIAGES AND HORSES.

EVERY new Project that has for its design the GOOD of the PUBLIC, deserves Support *only* so far as the scheme may be calculated to produce that effect. Without presuming too far, the following Plan is submitted to the opinion and candour of a discerning Public, for its future Patronage and Encouragement.

To avoid the extravagant expence of building New Carriages, many persons wish to be accommodated with those that are Second-hand; and there are certainly numbers, which Gentlemen are desirous of parting with, that would suit exactly the convenience of others who

who might want to buy, but who, from the preſent mode adopted, have but little chance of being ſuited, and often fall into greater expences than if they had really built new ones; for, the deceptions practiſed on Second-hand Carriages, by Brokers and Dealers, are ſuch as frequently beguile the judgment of thoſe who are tolerably well ſkilled---yet many ſtrangers to Carriages will riſk a purchaſe on their own ſuperficial knowledge, taking the appearance for the ſufficiency, which is ſoon proved to conſiſt of rotten materials, nicely ſurfaced with putty and ſhewy painting, or perhaps ornamented with a new inſide lining and ſome ſlight plated furniture.

That Gentlemen may have a probable chance of advantageouſly diſpoſing of their Carriages, which are to them only incumbrances, and muſt periſh from ſtanding by, and that others may be ſafely and well accommodated in purchaſing or exchanging, are two principal objects of this Regiſter: For, it cannot be doubted, that a ſatisfactory bargain is much more likely to be made between Gentlemen wanting to buy and thoſe wiſhing

to

to ſell their Carriages, than through the medium of a Dealer or Repoſitory. Repoſitories have the appearance of convenience; but as the ſentiments of the Buyer and Seller cannot be known to each other, an *advantage* of both can eaſily be taken, by raiſing the price to the Buyer, and reducing that of the Seller. When to this are added the Commiſſion to be charged for ſelling, the Rent for ſtanding, and the frequent opportunities of reſerving many Conveniences belonging to Carriages, which are not known to, or inquired after by, either the Buyer or the Seller, this traffic becomes a very lucrative one to thoſe engaged in it, though to the manifeſt prejudice of the Public at large.

The perſons principally benefited by a Repoſitory are the Brokers and Dealers, who find it convenient to ſend there, for ſale, ſuch articles as they would be aſhamed to ſell for themſelves; and as they always keep up a large ſupply, it may ſafely be concluded that their Carriages, however bad, will be recommended by the Repoſitory-keeper, in preference to thoſe belonging to ſtrangers: So that,

in

in every ſhape, the Public are liable to be duped by the artifices thus made uſe of.

That there are as many Carriages for Sale in the hands of Gentlemen as there are Purchaſers for, is more than probable; but the want of an opportunity of knowing where properly to apply for them, has hitherto kept both parties unſuited. To open a communication, therefore, between ſuch as may be deſirous of purchaſing and thoſe who may wiſh to ſell, muſt effectually anſwer every expectation, and put both parties in poſſeſſion of their wiſh without riſk of impoſition, as *Principals only* will treat with each other.

The methods by which this Plan is to be carried into effect, are as follow:

A Gentleman having a Carriage to diſpoſe of, is to ſend a particular deſcription of it, with the price at which it is to be ſold, where it is to be ſeen, and the addreſs of the Proprietor, to the Office, No. 36, Leather Lane, where it will be regiſtered exactly as deſcribed. On application of thoſe wanting to buy, a reference will be given to the Proprietor; ſo that

that *the parties themſelves* treat together; and if ſold, notice will be expected to be ſent to the Office, to prevent future trouble.---For the regiſtering, Five Shillings only is to be paid, which charge includes all expences for Advertiſements, which will be continued weekly till the Carriage ſhall be ſold.

A Gentleman wiſhing to purchaſe a Carriage, gives into the Office a particular deſcription of the ſort wanted; and references will be given to thoſe moſt likely to ſuit, for which One Shilling only is to be paid; and if not ſuited from amongſt thoſe that are regiſtered, the Carriage wanted may alſo be regiſtered, and advertiſed for weekly till procured, by paying Four Shillings more. Notice to be alſo ſent to the Office when provided.

The many advantages to be derived from this Plan muſt be obvious. To a Purchaſer, the trouble of inquiring all over the Town for a Carriage, and the riſk of deception in the purchaſe of it, are entirely obviated. To the Seller, the various expences of a Repoſitory, viz. rent, cleaning, commiſſion, &c. &c. amounting often to nearly the price of the Carriage

Carriage itſelf, are wholly ſaved; and, beſides, the uſe of the Carriage may be continued by the Proprietor till ſold.

Perſons living at a diſtance, and others who may be diffident of their own judgment, will derive conſiderable advantage in employing

W. FELTON

to buy for them, by paying him a Commiſſion of Two and a Half *per Cent.* from the amount of the purchaſe; for which ſmall premium he pledges his credit to exert himſelf for their intereſt, and to recommend ſuch only as are good bargains.

HORSES are alſo regiſtered in the ſame way; but W. FELTON having no knowledge of them, declines recommending any on his own judgment. The charge for regiſtering Horſes is 2*s.* 6*d.* with the above advantages, and 1*s.* for examining the Regiſter.

APPLICATIONS to be made from TEN to FOUR o'Clock.

Letters (Poſt-paid) immediately attended to.

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ERRATA.

Page. Line.

27, 7.—For *as*, read *but*.——8. For *so much*, read *entirely*.

29, 19.—For *support*, read *upper part*.

33, 23.—For *side-piece, from which it descends*, read *sides, from which they descend*.

38, 10.—For *door*, read *side*.

41, 12.—For *to which*, read *to this*.

53, 9.—This article ought to read, "A coach-body plain, "leathered on the outside, and stuffed on the in- "side, the carving and iron-work included, 30*l*."

60, 21.—After this line the following paragraph is omitted: "Fig. 2, is the hind end, shewing the springs, "and the method of framing the timbers."

65, 10.—For *middle of*, read *middle on*.

72, 22.—For *ledgers*, read *ledges*.

96, 16.—For *with loops*, read *for loops*.

98, 16.—For *plate x*, read *plate xi*.

127, 9.—The words *they are* have dropped out.

128, 20.—For *rims*, read *rim*.

130, 7.—After *chaise*, the words *than usual* are omitted.

134, 10.—For *Fig.* 3, read *Fig.* 2.

142, 18.—For *move*, read *much*.

146, 22.—For *plate xii*, read *plate xiii*.

150, 5.—For *Roses, ditto, ditto*, read *Roses per dozen*.

153, 14.—For 10*s.* read 12*s.*

172, 1.—For *containing* $6\frac{1}{2}$, read *containing* $5\frac{1}{2}$.

ib. 22.—Omitted here—

	Common. £. s. d.	Painted. £. s. d.	Patent. £. s. d.
Oil-skin Hammer-cloth,	1 16 0	2 2 0	3 13 6

184, 3.—For *phaeton* 9, read *phaeton* 8.

206, 4.—For *upper posts*, read *upper parts*.

232, 22.—For *A whole imperial for a roof*, read *A whole imperial for a* chariot *roof*.

234, 9.—For *four wheels*, read *fore-wheels*.

Some *prices* are erroneous, and ought to read thus—

182, 18.	*A pair of half ditto*,		-	0	8 0	0	7 0	0 6 0
	19.—*A pair of wing frames*,			1	10 0	1	5 0	1 1 0
191, 21.	*Head-plates for a coach*—*Circles*,			1	5 0	1	0 0	
	29. *Ditto for a phae-*	*Fancy device*,		1	6 0	0	16 0	
	30. *ton or chaise*,	*Crests embossed*,		1	15 0	1	0 0	
192, 7.	*Sham*	*A pair for a chariot, thick*,		2	6 6	1	15 0	
	9. *Joints*,	*A pair for a chariot, thin*,		2	0 0	1	10 0	

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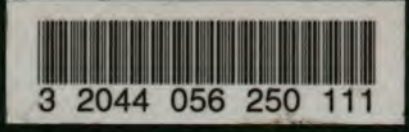
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